

press CTRL+F to find your EMS fault code

EMS 11

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on again. Does the trouble code remain active? In this case, replace the control unit.

EMS 12

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Remarks:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on

again. Does the trouble code remain active? In this case, replace the control unit.

EMS 13

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Remarks:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. Does the trouble code remain active? In this case, replace the control unit.

EMS 14

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again.

Does the trouble code remain active? In this case, replace the control unit.

EMS 15

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again.
Does the trouble code remain active? In this case, replace the control unit.

EMS 21

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again.

Does the trouble code remain active? In this case, replace the control unit.

EMS 22

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again.
Does the trouble code remain active? In this case, replace the control unit.

EMS 22

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Camshaft sensor

Fault:

The crankshaft sensor registers the rotation of the engine, but the camshaft sensor does not generate pulses.

The reasons:

The sensor is located at the wrong distance from the camshaft gear.
The sensor is connected to the wrong pin in the engine control unit connector.

There is a fault in the sensor or its wiring / connectors.

Remarks:

The engine management system uses a backup strategy to continue tracking the phases of the engine.

Elimination:

Clear trouble codes. If this DTC is re-generated, follow these steps:

Ensure the sensor is at the correct distance from the camshaft gear.

Make sure the sensor is connected to the correct pin in the engine control unit connector (try changing the polarity).

Replace sensor.

EMS 23

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Remarks:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. Does the trouble code remain active? In this case, replace the control unit.

EMS 40

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. Does the trouble code remain active? In this case, replace the control unit.

EMS 51

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, bypass valve

Fault:

Incorrect voltage in the solenoid valve circuit controlling the bypass valve.

The reasons:

The bypass valve of the turbocharger is controlled by a solenoid valve (V109), which receives signals from the engine management system. An open or short in the electrical circuit of the solenoid valve.

Notes:

The charge pressure is not adjusted correctly, danger of overload.

Elimination:

Check the solenoid valve, wiring and electrical connectors.

EMS 52

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, bypass valve

Fault:

Incorrect voltage in the solenoid valve circuit controlling the bypass valve.

The reasons:

The bypass valve of the turbocharger is controlled by a solenoid valve (V109), which receives signals from the engine management system. A short to ground in the electrical circuit of the solenoid valve.

Remarks:

The boost pressure is not adjusted correctly, this can lead to poor handling.

Elimination:

Check the solenoid valve, wiring and electrical connectors.

EMS 53

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, bypass valve

Fault:

Incorrect voltage in the solenoid valve circuit controlling the bypass valve.

The reasons:

The bypass valve of the turbocharger is controlled by a solenoid valve (V109), which receives signals from the engine management system. A short to power in the electrical circuit of the solenoid valve.

Notes:

The charge pressure is not adjusted correctly, danger of overload.

Elimination:

Check the solenoid valve, wiring and electrical connectors.

EMS 55

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

The voltage of the Lambda sensor heating system is too low.

The reasons:

Short to ground.

Notes:

Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

EMS 56

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

Lambda sensor heating system voltage too high.

The reasons:

Short to battery +.

Notes:

Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

EMS 57

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, bypass valve

Fault:

Incorrect voltage in the solenoid valve circuit controlling the bypass valve.

The reasons:

The bypass valve of the turbocharger is controlled by a solenoid valve (V109), which receives signals from the engine management system. An open or short in the electrical circuit of the solenoid valve.

Remarks:

The charge pressure is not adjusted correctly, danger of overload.

Elimination:

Check the solenoid valve, wiring and electrical connectors.

EMS 105

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The values ??of the atmospheric pressure sensor and the charge-air pressure sensor do not match. The atmospheric pressure sensor indicates a value higher than the value of the charge air pressure sensor.

The reasons:

Malfunction of one or both sensors or sensors blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 107

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The values of the charge air pressure sensor and the pressure sensor in the exhaust system do not match. The charge air pressure sensor indicates a value higher than the value of the pressure sensor in the exhaust system.

The reasons:

Malfunction of one or both sensors or sensors blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 112

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Outside temperature sensor or temperature sensor before air intake to the impeller of the turbocharger

Fault:

The outside temperature sensor indicates a too high value or the temperature sensor before intake of air to the impeller of the turbocharger shows a too low value.

The reasons:

Possible reasons:

outside temperature sensor or temperature sensor is faulty before air intake to the impeller of the turbocharger
cracks in the intake manifold

Remarks:

During this test, when the vehicle is moving, a comparison is made between the temperature reading from the outside temperature sensor and the temperature sensor before air intake to the impeller of the turbocharger. The check can be performed faster if the car is moving at a higher speed.

The EGR system turns off when the measured outside temperature is too low. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the outside temperature sensor and the temperature sensor before air intake to the impeller of the turbocharger.

Ensure that the pipeline between the turbocharger and the air filter is intact and not leaking.

Clear the DTC by turning off the key with the key and wait 15 seconds. Start the engine and allow the car to move for more than 10 minutes at a speed above 40 km / h.

EMS 113

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Outdoor temperature sensor

Fault:

The outside temperature sensor indicates a too high value or the temperature sensor before intake of air to the impeller of the turbocharger shows a too low value.

The reasons:

Possible reasons:

outside temperature sensor or temperature sensor is faulty before air intake to the impeller of the turbocharger

cracks in the intake manifold

Remarks:

During this test, when the vehicle is moving, a comparison is made between the temperature reading from the outside temperature sensor and the temperature sensor before air intake to the impeller of the turbocharger. The check can be performed faster if the car is moving at a higher speed.

The EGR system turns off when the measured outside temperature is too low. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the outside temperature sensor and the temperature sensor before air intake to the impeller of the turbocharger.

Ensure that the pipeline between the turbocharger and the air filter is intact and not leaking.

Clear the DTC by turning off the key with the key and wait 15 seconds. Start the engine and allow the car to move for more than 10 minutes at a speed above 40 km / h.

EMS 113

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Outdoor temperature

Fault:

The charge air temperature is noticeably higher than the outdoor temperature, while their values ??should be the same.

The reasons:

Possible reasons:

The temperature shown by the outside temperature sensor is too low, or the temperature shown by the charge air temperature sensor is too high.

There is a deterioration in the cooling efficiency provided by the charge-air cooler.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check for any visible faults that cause the charge air cooler to degrade.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The conditions under which the control unit checks:

The temperature of the charge air above 3 ° C.

The difference between the charge air temperature and the outside temperature must be less than 10 ° C for 10 seconds.

The control unit must perform the test in four consecutive cycles. This means that the power must be turned off and on four times using the ignition key at 10-second intervals.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 135

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure in the pressure accumulator

Fault:

The fuel pressure in the fuel rail is lower than requested.

The reasons:

Possible reasons:

Leakage.

Malfunction in high pressure pump, fuel metering inlet valve or fuel pressure sensor.

Insufficient fuel supply from the low pressure side.

Notes:

Black smoke may be emitted from the engine.

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

If there are other trouble codes for any other injector, perform troubleshooting for the injectors.

If a trouble code 0094 has been generated for a small leak on the high pressure side, the cause should be corrected first. Perform low-side troubleshooting, following La's "troubleshooting tree" in document 03: 14-01, edition 2.

Check supply pressure, fuel metering inlet valve, high pressure pump, booster pump, and check for leaks.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 135

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pressure in the engine power system

Fault:

The pressure in the fuel line is well below the set value.

The reasons:

Possible causes of failure:

One of the two relief valves opens at too low a pressure.

The fuel shut-off solenoid valve remains closed.

The fuel filter is clogged.

Air in the fuel or lack of fuel in the tank.

Malfunctioning booster pump.

Significant fuel leak from the system.

Notes:

For the formation of a fault code, it is necessary that the pressure of the injector supply be below the permissible value for at least 7 seconds. This time period was set to avoid writing code due to short-term pressure fluctuations not caused by functional deviation.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the maximum torque of the engine is reduced by approximately 40% while the fault continues to be present.

A fault code can self-destruct if its existence is regarded as temporary. After a certain period of time, when the problem does not occur, the fault code will be erased.

A malfunction code affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for fuel in the tank and bleed the fuel system to remove air from it.

Check the opening pressure of both relief valves.

Check the position of the fuel shut-off solenoid valve.

Check the condition of the fuel filter.

Check the fuel priming pump.

Check the tightness of the fuel system.

If a malfunction code is generated when the engine is running by inertia (for example, when the vehicle is going to descend with the accelerator pedal fully released), to facilitate troubleshooting, you can use the "Stored operational data" option on the "Pressure" tab supply "(") Supply Pressure "). If the supply pressure deviation over a certain time interval is 1.0 bar or more, the fuel filter may be clogged. If there is only a slight deviation in

the supply pressure, this may mean that the bypass valve is stuck.

To make sure the problem is resolved.

Turn on the ignition and wait at least 15 seconds. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 136

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel rail pressure

Fault:

The fuel pressure in the fuel rail is higher than the requested.

The reasons:

Increased flow on the low pressure side.

Possible reasons:

Malfunction of high pressure pump, fuel metering inlet valve or fuel pressure sensor.

Fuel metering inlet valve sticking or leaking.

Diffuser sealing rings in high pressure pump damaged.

Notes:

Abnormally high noise generated during combustion or detonation may be present.

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

If there is any trouble code related to the fuel metering inlet valve, first replace it.

Then check the supply pressure as described in L6 of document 03: 14-01, edition 2. Continue diagnostics on the "troubleshooting tree" Lc if the pressure is too high. Otherwise, replace the fuel metering inlet valve.

Check supply pressure, fuel metering inlet valve, high pressure pump and check for leaks.

Check diffuser o-rings in high pressure pump.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 136

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pressure in the fuel supply system

Fault:

The pressure in the fuel line significantly exceeds the set value.

The reasons:

The probable cause of the malfunction is a defect in the bypass valve. It is also possible that the drain line is clogged.

Notes:

A fault code will be recorded only if the pressure in the fuel line exceeds the set value for 7 seconds or a longer time interval. This time period was set to avoid writing code due to short-term pressure fluctuations not caused by functional deviation.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed). As a result of this malfunction, uneven engine operation and increased smoke can occur.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the bypass valve and fuel return line.

EMS 148

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure in the accumulator

Fault:

Small leakage in the high pressure section of the fuel system.

The fuel pressure in the ramp drops even in spite of the fact that the fuel metering inlet valve is completely closed and the fuel is not consumed.

The reasons:

Small leakage in the high pressure section of the fuel system.

Notes:

Rail pressure drops as the engine brakes, when the fuel metering inlet valve must be closed and the fuel is not consumed.

Elimination:

Search for external leaks in high pressure areas in the fuel system.

EMS 148

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fuel pressure in the pressure accumulator

Fault:

Low leakage in the high pressure circuit of the fuel system.

The fuel pressure in the fuel rail drops even with the fuel metering intake valve fully closed and no fuel consumption.

The reasons:

Low leakage in the high pressure circuit of the fuel system.

Notes:

The fuel rail pressure drops during engine braking when the fuel metering inlet valve must be closed and no fuel should be consumed.

Elimination:

Check for external fuel leaks from the high pressure circuit of the fuel system.

If there are no visible external leaks, continue searching for leaks in the following order:

Measure the return fuel pressure as described in Section H2 of Document 03: 14-01, Edition 2.

Check the integrity of the safety valve as described in Section H3 of Document 03: 14-01, Edition 2.

Replace the cylinder head of the high-pressure fuel pump as described in Section H9 of Document 03: 14-01, Edition 2.

EMS 149

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Intake manifold air temperature sensor

Fault:

The reading of the charge air temperature sensor is constant, despite the change in operating conditions.

The reasons:

The reading of the charge air temperature sensor was fixed at the same level.

Notes:

This may affect engine power. There is the danger of black smoke.

Elimination:

Take the charge temperature sensor reading. When placing the load on the engine, the temperature should increase.

Check the connectors and wiring of the sensor circuit. If no fault is found, replace the charge air temperature sensor.

EMS 150

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Intake manifold air temperature sensor

Fault:

Malfunction of the temperature sensor charge air

The reasons:

There may be a malfunction in the charge air temperature sensor or its wiring.

Notes:

This may affect engine power. There is the danger of black smoke.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 151

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Intake manifold air temperature sensor

Fault:

Faulty charge air temperature sensor.

The reasons:

Short to ground.

Notes:

This may affect engine power. There is the danger of black smoke.

Elimination:

Check the connectors and wiring of the charge air temperature sensor.

Measure the resistance of the intake air temperature sensor. The electrical resistance should be approximately 2.5 kΩ at 20 °C.

Measure the sensor supply voltage. With the sensor disconnected, the voltage should be approximately 5 V.

EMS 152

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Intake manifold air temperature sensor

Fault:

Faulty charge air temperature sensor.

The reasons:

Short to battery + (U30) or open circuit.

Notes:

This may affect engine power. There is the danger of black smoke.

Elimination:

Check the connectors and wiring of the charge air temperature sensor.

Measure the sensor resistance. The electrical resistance should be approximately 2.5 kΩ at 20 °C.

EMS 256

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Mass sensor air inlet T126

Fault:

The readings of the mass flow sensor remain unchanged, although the operating conditions indicate the opposite.

The reasons:

The mass air flow sensor may be faulty.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

Replace the air flow sensor.

EMS 256

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Intake air flow sensor

Fault:

The value from the mass flow sensor does not change, although operating conditions indicate the opposite.

The reasons:

The mass air flow sensor may be faulty.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

Replace the air flow sensor.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 257

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Intake air flow sensor

Fault:

Malfunctioning air flow sensor.

The reasons:

The mass flow sensor is not satisfactory.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

If there are additional fault codes for the mass flow sensor T126, first correct the malfunctions associated with them.

Diagnose the mass flow sensor and its connectors for electrical problems.

Check for leaks in the EGR system or in the charge-air system.

Check backpressure sensor in exhaust system T125, charge pressure sensor T122 or charge temperature sensor T121.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

EMS 257

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Mass sensor air inlet T126

Fault:

Malfunctioning air flow sensor.

The reasons:

The mass flow sensor is not satisfactory.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

If there are additional DTCs for the mass flow sensor T126, first run these DTCs.

Troubleshoot electrical problems with the mass flow sensor and connectors.

Check for leaks in the EGR system or in the charge-air system.

Check back pressure sensor in exhaust system T125, charge air pressure sensor T122 and charge air temperature sensor T121.

EMS 258

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Intake air flow sensor

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

Short to ground or open circuit.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The engine control unit uses the calculated value for the mass air flow sensor, and the engine power is reduced.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 258

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mass flow meter

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the electrical circuit of the mass flow sensor.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The mass flow sensor, oil pressure sensor and fuel temperature sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The engine will work with EGR, but without feedback on the signal of the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control system

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the mass flow sensor, oil pressure sensor and fuel temperature sensor with connectors and electrical wiring.

Continue as follows to ensure that the problem is resolved:

There should be no active DTCs in relation to applying voltage to the sensors or battery voltage.

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 258

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Mass sensor air inlet T126

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

Short to ground or open circuit.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The engine control unit uses the calculated value for the mass air flow sensor, and the engine power is reduced.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

Be sure to perform a basic adaptation of the mass flow sensor adaptation after replacing the mass flow sensor or after repairing a leak in the engine intake system.

EMS 259

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Mass sensor air inlet T126

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery +.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal

requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The engine control unit uses the calculated value for the mass air flow sensor, and the engine power is reduced.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

Be sure to perform a basic adaptation of the mass flow sensor adaptation after replacing the mass flow sensor or after repairing a leak in the engine intake system.

EMS 259

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Intake air flow sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery +.

Notes:

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The engine control unit uses the calculated value for the mass air flow sensor, and the engine power is reduced.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass

flow sensor or after repairing a leak in the engine intake system.

EMS 259

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mass flow meter

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An electrical break in the mass flow sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The mass flow sensor, oil pressure sensor and fuel temperature sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The engine will work with EGR, but without feedback on the signal of the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NO_x); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control system

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the mass flow sensor, oil pressure sensor and fuel temperature sensor with connectors and electrical wiring.

Continue as follows to ensure that the problem is resolved:

There should be no active DTCs in relation to applying voltage to the sensors or battery voltage.

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 261

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor charge air.

Fault:

The charge air pressure sensor generates a value outside the acceptable range.

The reasons:

The charge air pressure sensor produces a too high or too low reading compared to the readings from other pressure sensors, as there is a fault in the sensor or defects in the electrical connectors or wiring.

Notes:

A malfunction may result in an incorrect amount of fuel and a decrease in engine power.

The fault code cannot be cleared while the fault is present.

Elimination:

When the engine is off and the ignition key is in position U15:

Compare the value of the charge air pressure sensor with the values of the atmospheric pressure sensor and the exhaust back pressure sensor. All sensors must give the same readings.

Clear the fault code. To do this, first warm up the engine. Switch off the ignition. The DTC clears within 30 seconds.

EMS 262

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure sensor charge air.

Fault:

When the power is turned on, the value of the charge air pressure sensor is not equal to the atmospheric pressure and / or exhaust back pressure.

The reasons:

Possible reasons:

The charge air pressure sensor generates an incorrect value.

Malfunctioning electrical connector or wiring in the circuit.

Notes:

The engine does not receive the correct amount of fuel. Power is reduced to protect the engine.

Elimination:

Troubleshoot by comparing the charge-air temperature sensor with the atmospheric pressure sensor and the backpressure sensor in the exhaust system. All sensors must display the same value when the engine is off, but the power is on. Replace the faulty sensor.

To make sure that the problem is resolved, warm up and turn off the engine. Turn on the power with the ignition key, wait 30 seconds and then start the engine. If the fault is resolved, the fault code immediately becomes inactive.

EMS 262

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Charge air pressure sensor

Fault:

In idle mode, the value of the charge air pressure sensor is not equal to the atmospheric pressure and / or exhaust back pressure.

The reasons:

The charge air pressure sensor generates an incorrect value.

Malfunctioning electrical connector or wiring in the circuit.

Notes:

The engine does not receive the correct amount of fuel. Power is reduced to protect the engine.

Elimination:

Troubleshoot by comparing the charge-air temperature sensor with the atmospheric pressure sensor and the

backpressure sensor in the exhaust system. All sensors must give the same readings.

When the engine is off and the ignition key is in position U15:

Troubleshoot.

First erase the DTC by allowing the engine to run until it reaches operating temperature. Switch off the ignition. The DTC clears within 30 seconds.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 263

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor charge air.

Fault:

The voltage in the electrical circuit was too low.

The reasons:

Short to ground or open circuit.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the charge air pressure sensor as well as the electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 263

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Boost pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit of the charge air pressure sensor circuit. This fault may be due to clogging of the intake system.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The charge air pressure sensor, the coolant temperature sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 40% while the fault code is active. The engine also responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, "roughly", using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the charge air pressure sensor, coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Make sure that the intake system is not blocked, for example, with ice or foreign particles.

Also make sure that the connecting pipes are intact and not compressed.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 264

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Boost pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open circuit in the charge air pressure sensor circuit.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The charge air pressure sensor, the coolant temperature sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 40% while the fault code is active. The engine also responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, "roughly", using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the charge air pressure sensor, coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 264

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor charge air.

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery or lost ground.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 273

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Air intake temperature sensor

Fault:

Defective air intake temperature sensor. The voltage in the electrical circuit was above normal.

The reasons:

Short to battery + or an open circuit in the air intake temperature sensor circuit.

Notes:

This may affect engine power.

Gas engines have a torque limit.

Elimination:

Check the electrical components, electrical connectors and wiring.

Troubleshooting for air intake temperature sensor.

EMS 273

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Charge air temperature

Fault:

The charge air temperature is noticeably lower than the outside temperature, while their values ??should be the same. The signal from the charge-air temperature sensor has an unreliable value.

The reasons:

Possible reasons:

The temperature shown by the outside temperature sensor is too high.

The temperature indicated by the charge-air temperature sensor is too low.

Malfunction in the electrical circuit of the charge air pressure sensor, coolant temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The charge air temperature sensor, coolant temperature sensor, charge air pressure sensor, fuel line pressure sensor and fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

A malfunction code affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the

instrument cluster, warning of high levels of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the charge air temperature sensor, coolant temperature sensor, charge air pressure sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

The conditions under which the control unit checks:

The temperature of the charge air above 3 ° C.

The difference between the charge air temperature and the outside temperature must be less than 10 ° C for 10 seconds.

The control unit must perform the test in four consecutive cycles. This means that the power must be turned off and on four times using the ignition key at 10-second intervals.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 273

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

T121 inflatable air temperature sensor or T126 air intake temperature sensor

Fault:

For engine control units manufactured before February 2009:

Malfunction of the temperature sensor charge air T121.

For engine control units manufactured after February 2009:

Malfunction of the temperature sensor air intake T126. The sensor consists of the same elements as the intake air flow sensor. The voltage in the electrical circuit was above normal.

The reasons:

For engine control units manufactured before February 2009:

There may be a malfunction in the charge air temperature sensor or its wiring.

For engine control units manufactured after February 2009:

Short to battery + or an open circuit in the air intake temperature sensor circuit.

Notes:

For engine control units manufactured before February 2009:

This may affect engine power. There is the danger of black smoke.

For engine control units manufactured after February 2009:

This may affect engine power.

Elimination:

For engine control units manufactured before February 2009:

Check the elements, connector and wiring of the electrical circuit of the charge air temperature sensor T121.

For engine control units manufactured after February 2009:

Check the components, connector and electrical wiring for the air intake temperature sensor T121.

Troubleshooting for air intake temperature sensor.

EMS 274

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Charge air temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the charge air temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, coolant temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The charge air temperature sensor, coolant temperature sensor, charge air pressure sensor, fuel line pressure sensor and fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NO_x); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NO_x control system also display a text message.

Cars with NO_x control system

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine.

Check the charge air temperature sensor, coolant temperature sensor, charge air pressure sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 274

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Air intake temperature sensor

Fault:

Voltage in the air intake temperature sensor circuit is below acceptable level.

The reasons:

Short to ground.

Notes:

This may affect engine power.

Elimination:

Check the intake air temperature sensor and its connectors and wiring.

Measure the resistance of the air intake temperature sensor. The electrical resistance should be approximately 2.5 k Ω at 20 ° C.

Measure the supply voltage of the air intake temperature sensor. With the sensor disconnected, the voltage should be approximately 5 V.

EMS 274

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Charge air temperature sensor T121 or air intake temperature sensor T126

Fault:

For engine control units manufactured after February 2009:

Malfunction of the temperature sensor charge air T121.

For engine control units manufactured before February 2009:

Malfunction of the temperature sensor air intake T126. The sensor consists of the same elements as the intake air flow sensor. The voltage in the circuit was below acceptable levels.

The reasons:

Short circuit to ground

Notes:

For engine control units manufactured before February 2009:

This may affect engine power. There is the danger of black smoke.

For engine control units manufactured after February 2009:

This may affect engine power.

Elimination:

For engine control units manufactured before February 2009:

Check the charge air temperature sensor T121 and its connectors and wiring.

Measure the resistance of the intake air temperature sensor. The electrical resistance should be approximately 2.5 kΩ at 20 ° C.

Measure the sensor supply voltage. With the sensor disconnected, the voltage should be approximately 5 V.

For engine control units manufactured after February 2009:

Check the air intake temperature sensor T126 and its connectors and wiring.

Measure the sensor resistance. The electrical resistance should be approximately 2.5 kΩ at 20 ° C.

Measure the sensor supply voltage. With the sensor disconnected, the voltage should be approximately 5 V.

EMS 275

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Charge air temperature sensor T121 or air intake temperature sensor T126

Fault:

For engine control units manufactured before February 2009:

Malfunction of the temperature sensor charge air T121.

For engine control units manufactured after February 2009:

Malfunction of the temperature sensor air intake T126. The sensor consists of the same elements as the intake air flow sensor. The voltage in the electrical circuit was above normal.

The reasons:

Short to battery + (U30) or open circuit.

Notes:

For engine control units manufactured before February 2009:

This can affect engine power and there is a danger of black smoke.

For engine control units manufactured after February 2009:

This may affect engine power.

Elimination:

Check the electrical components, electrical connectors and wiring.

Ensure that the sensor resistance is approximately 2.5 kΩ at 20 ° C.

EMS 275

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Air intake temperature sensor

Fault:

The voltage in the electrical circuit of the air intake temperature sensor was too high.

The reasons:

Short circuit to + battery or open circuit.

Notes:

This may affect engine power.

Elimination:

Check the electrical components, electrical connectors and wiring.

Ensure that the sensor resistance is approximately 2.5 kΩ at 20 ° C.

EMS 275

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Charge air temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

Open circuit in the temperature sensor charge air.

Malfunction in the electrical circuit of the charge air pressure sensor, coolant temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine.

Check the charge air temperature sensor, coolant temperature sensor, charge air pressure sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 277

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant temperature sensor

Fault:

The value of the coolant temperature does not change even though the engine is working with a high load.

The reasons:

The signal from the coolant temperature sensor does not change.

Notes:

Reduced engine power. The engine control unit reduces torque to protect the engine.

The fault code cannot be cleared while the fault is present.

Elimination:

Check if the coolant temperature is static.

Check the coolant temperature sensor electrical connectors and wiring.

If necessary, replace the coolant temperature sensor.

To erase the fault code: Ensure the engine is running at medium or high load. If the fault is resolved, the fault code becomes inactive and can be erased.

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

EMS 277

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor

Fault:

The coolant temperature has not changed, although the engine has a large load.

The reasons:

The coolant temperature sensor is locked in one position.

Notes:

Reduced engine power. The engine control unit reduces torque to protect the engine.

The fault code cannot be cleared while the fault is present.

Elimination:

Check if the coolant temperature is static.

Check the coolant temperature sensor electrical connectors and wiring.

If necessary, replace the coolant temperature sensor.

To erase the fault code: Ensure the engine is running at moderate or heavy load. If the fault is resolved, the fault code becomes inactive and can be erased.

EMS 278

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor 1

Fault:

Coolant temperature sensor malfunction.

The reasons:

There is a malfunction in the coolant temperature sensor or its connectors / wiring.

Notes:

Reduced engine power.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

EMS 279

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor 1

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

Short to ground.

Notes:

It may be difficult to start a cold engine and uneven idling, because the engine cannot operate the cold start position.

Reduced engine power. Torque is reduced to protect the engine.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 279

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Coolant temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short to coolant temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value. If the engine is actually colder than the pre-programmed value indicates, it will idle more irregularly and be more difficult to start.

The engine will operate at a high idle speed as long as the fault is present.

On engines equipped with an EGR system, the engine control unit will turn off the system.

Malfunction affects vehicle emissions of nitrogen oxides (NO_x); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NO_x control system also display a text message.

Cars with NO_x control system

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine.

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Continue as follows to ensure that the problem is resolved:

Switch the ignition on and off with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 280

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor 1

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short circuit to + battery or open circuit.

Notes:

It may be difficult to start a cold engine and uneven idling, because the engine cannot operate the cold start position.

Reduced engine power. In a vehicle with an NO_x monitoring system, it is necessary to invalidate it before

removing the DTC.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 280

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Coolant temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the coolant temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value. If the engine is actually colder than the pre-programmed value indicates, it will idle more irregularly and be more difficult to start.

The engine will operate at a high idle speed as long as the fault is present.

On engines equipped with an EGR system, the engine control unit will turn off the system.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine.

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Continue as follows to ensure that the problem is resolved:

Switch the ignition on and off with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 289

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle position indication is incorrect.

The reasons:

The measurement is performed using two potentiometers, and their values ??do not match.

There may be a fault in the power supply circuit of the potentiometers.

Notes:

The engine stops or goes into emergency mode.

Elimination:

Check fuses. Check the element, connectors and wiring. Replace throttle valve.

EMS 290

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle position indication is incorrect.

The reasons:

Short to ground or open circuit.

Notes:

Torque is reduced to protect the engine.

Elimination:

Check fuses. Check the element, connectors and wiring. Replace throttle valve.

EMS 291

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle position indication is incorrect.

The reasons:

Short to battery +.

Notes:

Torque is reduced to protect the engine.

Elimination:

Check fuses. Check the element, connectors and wiring. Replace throttle valve.

EMS 296

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant temperature

Fault:

Coolant temperature below thermostat control temperature.

The reasons:

The thermostat is stuck in the open position, a malfunction in the coolant temperature sensor.

Notes:

No description

Elimination:

Check thermostat and coolant temperature sensor.

EMS 304

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

The value of the Lambda sensor deviates from the specification.

The reasons:

An open circuit in the Lambda sensor circuit.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 305

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

The value of the Lambda sensor deviates from the specification.

The reasons:

Short circuit Lambda sensor to ground.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 306

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

The value of the Lambda sensor deviates from the specification.

The reasons:

Short circuit of the lambda sensor on the + battery.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 307

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda sensor

Fault:

The value of the Lambda sensor deviates from the specification.

The reasons:

Worn lambda sensor.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 310

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda diagnostics

Fault:

The value of the Lambda sensor diagnostic function deviates from the specification.

The reasons:

Electrical fault in the Lambda sensor or in its connectors and wiring.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 311

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda diagnostics

Fault:

The value of the Lambda sensor diagnostic function deviates from the specification.

The reasons:

Short to ground.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 312

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Lambda diagnostics

Fault:

The value of the Lambda sensor diagnostic function deviates from the specification.

The reasons:

Short circuit of the lambda sensor on the + battery.

Notes:

Engine torque is reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 313

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda diagnostics

Fault:

The value of the Lambda sensor diagnostic function deviates from the specification.

The reasons:

Worn lambda sensor or electrical fault.

Notes:

Engine torque can be reduced to protect the engine and the environment.

Elimination:

Check the element, connectors and wiring. Replace lambda sensor.

After completing the action, start the engine and let it run at a speed of at least 1000 rpm to remove the malfunction code.

EMS 361

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Gas mixture

Fault:

It is impossible to maintain the correct composition of the gas mixture.

Adaptation values of the gas mixture reached the upper or lower limit.

The reasons:

Air failure – too little air enters the cylinders. There may be a leak in the intake manifold, there may be a problem in the gas mixing system or a malfunction of the nozzle.

Notes:

Fault condition can be compensated to some extent by lambda control. There is a risk of misfire.

Elimination:

Check for leaks in the air supply system or intake manifold.

Check the nozzles.

Perform diagnostics of the air supply system and the gas mixing system.

EMS 361

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Fuel adaptation

Fault:

The correct fuel mixture was not obtained.

The reasons:

Fuel adaptation has exceeded or dropped below the adaptation limit.

Notes:

There is a risk of misfire.

Elimination:

Ensure that there is no leakage in the entire engine intake system.

Check the system gas supply and injectors.

EMS 386

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the fuel temperature sensor circuit.

Malfunction of the electrical circuit of the oil pressure sensor or electrical circuit of the mass flow sensor.

Notes:

The fuel temperature sensor, oil pressure sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Check the fuel temperature sensor, oil pressure sensor and mass flow sensor with connectors and electrical wiring.

EMS 387

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the fuel temperature sensor circuit.

Malfunction of the electrical circuit of the oil pressure sensor or electrical circuit of the mass flow sensor.

Notes:

The fuel temperature sensor, oil pressure sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Check the fuel temperature sensor, oil pressure sensor and mass flow sensor with connectors and electrical wiring.

EMS 396

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Short circuit sensor circuit.

A fault can also be caused by a fault in other sensors with a common power supply circuit. If, at the same time, the memory code of the oil pressure sensor is recorded in the memory, a defect in the common internal power supply is possible.

Notes:

The pressure sensor in the fuel line, the coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active.

Elimination:

Check the fuel line pressure sensor, coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 397

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

An open in the sensor circuit.

A fault can also be caused by a fault in other sensors with a common power supply circuit. If, at the same time, the memory code of the oil pressure sensor is recorded in the memory, a defect in the common internal power

supply is possible.

Notes:

The pressure sensor in the fuel line, the coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active.

Elimination:

Check the fuel line pressure sensor, coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 400

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fuel pressure sensor

Fault:

The value from the fuel pressure sensor does not change, although operating conditions indicate otherwise.

The reasons:

The signal of the fuel pressure sensor does not change.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

EMS 400

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure sensor

Fault:

The value from the fuel pressure sensor remains unchanged, although operating conditions indicate the opposite.

The reasons:

The signal from the fuel pressure sensor “stuck” at a fixed level.

Notes:

When this DTC is active, engine power is reduced and the EGR system shuts off.

The fault code cannot be cleared while the fault is present.

Elimination:

Replace the fuel pressure sensor.

EMS 401

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure sensor

Fault:

Malfunctioning fuel pressure sensor.

The reasons:

An item may have several different faults.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 402

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure sensor

Fault:

The voltage in the electrical circuit was below normal.

The reasons:

Short to ground or open circuit.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a

danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 403

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure sensor

Fault:

The voltage in the electrical circuit was above normal.

The reasons:

Short to battery or lost contact with ground.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 513

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably, electrical wiring or solenoid valve of cylinder 1 nozzle is faulty.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 514

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably, electrical wiring or solenoid valve of cylinder 2 nozzle is faulty.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 515

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably faulty wiring or solenoid valve of the nozzle of the cylinder number 3.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 516

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably, electrical wiring or solenoid valve of cylinder 4 nozzle is faulty.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 517

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably faulty wiring or solenoid valve of the nozzle of the cylinder number 5.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of

the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 518

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably faulty wiring or solenoid valve of the nozzle of the cylinder number 6.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 519

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably faulty electrical wiring or solenoid valve of the nozzle of the cylinder number 7.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 520

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8

Fault:

Identified open circuit in the solenoid valve in the injector nozzles or wiring.

The reasons:

Probably, electrical wiring or solenoid valve of cylinder 8 nozzle is faulty.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults. Engine power varies to varying degrees depending on how many injectors are faulty.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the two free ends of the positive and negative wires, respectively.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 535

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant temperature

Fault:

Engine coolant temperature too high.

The reasons:

Possible causes are a malfunction in the coolant pump or temperature sensor.

Notes:

No description

Elimination:

Check the coolant pump, temperature sensor and other elements in the coolant circuit.

EMS 535

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

overheat protection

Fault:

Coolant temperature has exceeded 104 ° C.

The reasons:

This malfunction may be caused by the following reasons: low coolant level, coolant leakage or clogged radiator.

Notes:

At a temperature of 106 ° C, the maximum torque of the engine gradually decreases by 30%.

The instrument cluster lights up in the instrument cluster.

Elimination:

Check the coolant level and tightness of the cooling system. Make sure that the radiator is not clogged with dirt and sludge.

EMS 537

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed

Fault:

The engine speed exceeded the allowable value.

The reasons:

Possible reasons:

Operator error, for example, improper downshifting

Oil or fuel leakage in the intake system or in the cylinders.

Notes:

Fuel injection (engine) is stopped when the engine speed is too high and remains off until the speed is normalized. The engine then resumes normal operation if there is no damage.

Elimination:

If there is a problem with the engine, make sure that there is no leakage of oil and fuel in the intake system.

EMS 537

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed

Fault:

The engine speed exceeded the allowable value.

The reasons:

Incorrect handling, for example, incorrectly shifted to a lower gear.

Notes:

The fuel supply to the engine stops at 3000 rpm. Restoration of the fuel supply occurs after the engine speed becomes less than 3000 rpm. In this case, the engine braking mechanism works with maximum efficiency. After reducing the engine speed, normal engine operation is restored.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 564

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger

Fault:

The current boost pressure exceeds the requested boost pressure greater than the allowed tolerance, or the current boost pressure exceeds the maximum allowable pressure.

The reasons:

Possible reasons:

Faulty turbocharger.

Too much fuel is injected.

The engine runs on engine oil (leakage).

Faulty boost pressure control system motor.

Gas Fired Engine:

Turbine bypass valve stuck in the closed position.

The boost pressure sensor shows an incorrect value.

Notes:

Gas Fired Engine:

There is a danger of hose detachment.

The opening of the throttle valve is limited.

Elimination:

Check the turbocharger and its electric motor.

Check the engine oil consumption, for example, if there is a leak in the turbocharger.

Gas Fired Engine:

Check boost pressure control motor and boost pressure sensor.

EMS 580

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbine Bypass Solenoid Valve

Fault:

The turbine bypass solenoid valve cannot control the charge air pressure.

The reasons:

Short circuit or open circuit.

Notes:

The charge air pressure cannot be controlled.

Elimination:

Check the element, connectors and wiring. Replace the turbine bypass solenoid valve.

EMS 581

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbine Bypass Solenoid Valve

Fault:

The turbine bypass solenoid valve cannot control the charge air pressure.

The reasons:

Short circuit of the solenoid valve bypassing the turbine to ground.

Notes:

The charge air pressure cannot be controlled.

Elimination:

Check the element, connectors and wiring. Replace the turbine bypass solenoid valve.

EMS 582

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbine Bypass Solenoid Valve

Fault:

The turbine bypass solenoid valve cannot control the charge air pressure.

The reasons:

Short circuit of the solenoid valve bypassing the turbine on the + battery.

Notes:

The charge air pressure cannot be controlled.

Elimination:

Check the element, connectors and wiring. Replace the turbine bypass solenoid valve.

EMS 583

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbine Bypass Actuator

EMS 585

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbine Bypass Valve

EMS 609

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 1

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 611

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 1

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 612

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 2

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 614

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 2

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 615

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 3

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 617

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 3

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 624

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 4

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 626

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 4

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 627

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 5

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 629

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 5

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 630

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 6

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 632

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.) Cylinder 6

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 633

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 7

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 641

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.), Cylinder 7

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 642

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 8

Fault:

Short to ground.

The reasons:

Short to injector wiring harness.

Notes:

A fault is only recorded while the engine is running. The system continues to attempt to use nozzles. Engine torque is reduced depending on the number of faulty injectors.

Elimination:

Disconnect the injector wires from the control unit and from the injector. Measure the resistance between both sides of the coil and the cylinder block. Resistance must be infinite.

Check the wiring to the connector and the bushing in the cylinder head.

Measure the resistance between each wire and the cylinder block. Resistance must be infinite.

Connect the wires to the engine control unit. Measure the resistance between the wires and ground of the power supply. It must be at least 1 MO.

EMS 644

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder balance (min. Or max.), Cylinder 8

Fault:

The cylinder balance values ??have reached their maximum and minimum limits.

The reasons:

The cylinder does not output the same power as the other cylinders for the following reason:

nozzle leakage

injector restrictor valve defective.

low compression

The cause may be air in the fuel system, but in this case several cylinders are likely to be affected.

Notes:

Engine running unevenly. If there is too much fuel in the engine, this results in black smoke emissions, and if there is too little fuel in the engine, the result is white smoke emissions.

Recognition of codes invalid can be performed only if:

no active trouble code affecting coolant temperature

engine running at idle

coolant temperature is approximately 80 ° C

Elimination:

Check the nozzle and the compression in the cylinder.

EMS 665

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger

Fault:

The actual boost pressure below the requested boost pressure is greater than the permitted tolerance.

The reasons:

Possible reasons:

Air filter plugging.

Leakage in the gas exchange system.

Faulty turbocharger.

Faulty boost pressure control system motor.

Gas Fired Engine:

Turbine bypass valve stuck open.

The boost pressure sensor shows an incorrect value.

Notes:

Engine torque is reduced to protect the engine and the environment.

Black smoke emissions are possible.

Elimination:

Check the air filter.

Check the turbocharger and its electric motor.

Gas Fired Engine:

Check the throttle valve.

Check the operation of the turbine bypass valve and the boost pressure sensor.

EMS 768

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition Pass in Cylinders

Fault:

Two or more cylinders do not generate torque.

The reasons:

Ignition misfire is present in two or more cylinders.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 769

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition skip in cylinder 1

Fault:

Cylinder 1 does not generate torque.

The reasons:

Ignition skip in cylinder 1.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 770

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition skip in cylinder 2

Fault:

Cylinder 2 does not generate torque.

The reasons:

Ignition skip in cylinder 2.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 771

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition skip in cylinder 3

Fault:

Cylinder 3 does not generate torque.

The reasons:

Ignition skip in cylinder 3.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 772

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition skip in cylinder 4

Fault:

Cylinder 4 does not generate torque.

The reasons:

Ignition skip in the cylinder 4.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 773

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition skip in cylinder 5

Fault:

Cylinder 5 does not generate torque.

The reasons:

Ignition skip in cylinder 5.

Notes:

Engine torque is reduced to protect the engine and catalytic converter.

Engine performance is deteriorating.

Elimination:

Do the following:

Check the gas tank assembly.

Check for faults in the gas supply system.

Check for faults in the cylinders.

Check if the ignition is working.

Check that the ignition timing is set correctly.

Check the electrical operation of the ignition coil.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

EMS 806

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 1 generates a deviating value.

The reasons:

Knock sensor 1 defective.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 807

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 1 generates a deviating value.

The reasons:

The knock sensor has a short to ground or open circuit.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 808

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 1 generates a deviating value.

The reasons:

Short circuit of the electrical circuit of the knock sensor on the + battery.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 817

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 2 generates a deviating value.

The reasons:

Knock sensor 2 is faulty.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 818

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 2 generates a deviating value.

The reasons:

The knock sensor has a short to ground or open circuit.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 819

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Knock sensor

Fault:

Knock sensor 2 generates a deviating value.

The reasons:

Short circuit of the electrical circuit of the knock sensor on the + battery.

Notes:

Torque is reduced to protect the engine. There is a risk of misfire.

Elimination:

Check the element, connectors and wiring. Replace the knock sensor.

EMS 832

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Camshaft sensor

Fault:

Open electrical circuit of the camshaft position sensor.

The reasons:

Open electrical circuit of the camshaft position sensor.

Notes:

The engine control unit uses a backup strategy to continue tracking the phases of the engine.

Elimination:

Check sensor connectors and wiring.

Replace sensor.

EMS 833

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Camshaft sensor

Fault:

The camshaft position sensor indicates an incorrect value.

The reasons:

The sensor is in the wrong position or has an electrical fault.

Notes:

The engine control unit uses a backup strategy to continue tracking the phases of the engine.

Gas-fueled engine: Starting up a warm engine is difficult, and engine torque is limited.

Elimination:

Make sure the sensor is in the correct position.

Check for electrical faults in the sensor or its connection to the engine control unit.

Replace sensor.

EMS 834

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Camshaft sensor

Fault:

A short to ground in the electrical circuit of the camshaft position sensor.

The reasons:

Short to ground.

Notes:

The engine management system uses an alternative strategy to continue tracking the phases of the engine.

Gas Fired Engine:

Difficult engine start.

Elimination:

Check sensor connectors and wiring. Replace the camshaft sensor.

EMS 835

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Camshaft sensor

Fault:

Short circuit of the camshaft position sensor on the + battery.

The reasons:

Short to battery +.

Notes:

The engine management system uses an alternative strategy to continue tracking the phases of the engine.

Gas Fired Engine:

Difficult engine start.

Elimination:

Check sensor connectors and wiring. Replace the camshaft sensor.

EMS 836

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Camshaft sensor

Fault:

Intermittent malfunction.

The reasons:

Loose connections or electrical leads.

Notes:

Difficult engine start.

Elimination:

Perform sensor diagnostics for electrical fault finding. Replace sensor.

EMS 1024

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR composition

Fault:

Incorrect EGR content.

The reasons:

Possible reasons:

EGR valve stuck.

There is a leak in the EGR system.

Significant pressure drop in the EGR cooler.

The turbocharger motor is faulty.

Sticking of the turbocharger ring nozzle.

Possible leakage in the engine intake system.

Notes:

Engine torque is reduced, and the EGR system shuts down.

The fault code cannot be cleared while the fault is present.

Elimination:

First, troubleshoot other fault codes.

Then check:

EGR valve.

Turbocharger ring nozzle and electric motor.

EGR system and EGR cooler.

Engine intake system.

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

Perform basic adjustment and adaptation of the EGR system using also SDP3.

Ensure that the exhaust gas high warning lamp has gone out.

If the EGR system check for invalidation of malfunction codes is interrupted before it is completed, carry out a road test of the vehicle until the exhaust toxic high warning lamp goes out.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 1025

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR composition

Fault:

Recycle too little exhaust gas. It is impossible to achieve the desired value of the amount of exhaust gases.

The reasons:

EGR control system does not work.

Possible causes of a malfunction can be the following:

The variable geometry turbocharger is wedged in the open position or limited by the anti-overrun protection system.

The EGR valve is stuck in the closed position.

EGR gas leakage.

Pressure drop in the EGR cooler.

Notes:

Adaptation of the mass flow sensor is disabled.

The engine control unit uses the calculated value for the mass flow sensor.

In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check:

variable geometry turbocharger

EGR valve

are there leaks from EGR

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

Perform basic adjustment and adaptation of the EGR system using also SDP3.

Ensure that the exhaust gas high warning lamp has gone out.

If the EGR system check for invalidation of malfunction codes is interrupted before it is completed, carry out a road test of the vehicle until the exhaust toxic high warning lamp goes out.

EMS 1025

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR composition

Fault:

Exhaust gas (exhaust gas) quantity too low; It is not possible to increase the amount of recycled exhaust gas to a fixed level.

The reasons:

Possible causes of the DTC may be as follows:

The EGR valve shut-off element does not open. This can be caused by sticking of the valve itself, insufficient pressure of compressed air supplied to the executive cylinder or leakage of compressed air from the executive cylinder.

Track valve may be faulty.

The movable element of the diffuser stuck in the open position.

EGR gas leakage.

The mass flow sensor may indicate a too high value, as a result forcing the engine control unit to conclude that the engine is receiving too few EGR gases.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the valve in the EGR valve, control cylinder and the follow valve by activating the elements using the Scania Diagnos program.

Check wedge diffuser.

Check for any leakage in the EGR system.

Check the air flow sensor.

EMS 1026

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR composition

Fault:

Exhaust gas (exhaust gas) quantity too high; It is not possible to reduce the amount of recycled exhaust gas to a fixed level.

The reasons:

Possible causes of the DTC may be as follows:

The EGR valve locking element does not block the flow area.

The leakage of the follower valve.

Blockage of the channel of the valve of pressure relief in the valve block.

The mass flow sensor indicates that the value is too low, as a result of which the input to the engine control unit receives information about a greatly overestimated amount of recycled exhaust gases.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the EGR valve.

Check the tightness of the follower valve.

Check for pressure relief through the valve block.

Check the air flow sensor.

EMS 1026

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR composition

Fault:

Exhaust gas (exhaust gas) quantity too high; It is not possible to reduce the amount of recycled exhaust gas to a fixed level.

The reasons:

EGR control system does not work.

Possible causes of a malfunction can be the following:

Variable geometry turbocharger stuck in closed position.

The EGR valve is stuck open.

Leakage between mass flow sensor and variable geometry turbocharger.

The charge air pressure sensor indicates an incorrect value.

Notes:

Engine power is reduced due to high EGR content.

Elimination:

Check:

variable geometry turbocharger

EGR valve

value of the charge air pressure sensor relative to the values ??of the atmospheric pressure sensor and the back pressure sensor in the exhaust system.

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

Perform basic adjustment and adaptation of the EGR system using also SDP3.

Ensure that the exhaust gas high warning lamp has gone out.

If the EGR system check for invalidation of malfunction codes is interrupted before it is completed, carry out a road test of the vehicle until the exhaust toxic high warning lamp goes out.

EMS 1028

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

EGR valve with a pneumatic cylinder control

Fault:

Incorrect EGR content.

The reasons:

The EGR valve does not open and does not close completely, or the EGR valve opens and closes too slowly.

Notes:

The engine control unit shuts down the EGR system.

The fault code cannot be cleared while the fault is present.

A fault code is generated in conjunction with EMS 1160 or EMS 5120.

Elimination:

Perform the necessary actions in accordance with the fault code EMS 1160 or EMS 5120.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler

following the instructions given in the manual for service stations, subgroup 01-65.

EMS 1029

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR Position Sensor

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

A short to ground or open circuit in the output signal or battery voltage.

Notes:

The engine control unit switches off the exhaust gas recirculation system.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the position of the EGR valve, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

After replacing the control cylinder, EGR valve, or position sensor T124, be sure to perform basic setup and adaptation of the EGR system using SDP3.

After replacing the control cylinder, EGR valve, or position sensor T124, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 1030

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EGR Position Sensor

Fault:

Short circuit of the position of the EGR valve position sensor on the + battery.

The reasons:

Short circuit of the position of the EGR valve position sensor on the + battery.

Notes:

The DTC can be cleared when inactive.

Elimination:

Check the position of the EGR valve, connectors and electrical wiring.

After replacing the control cylinder, EGR valve, or position sensor T124, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 1136

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Backpressure sensor in exhaust system

Fault:

Implausible back pressure in the exhaust system.

The reasons:

Possible reasons:

Faulty electrical connector or sensor wiring.

The cause of the malfunction code generation can be the blocked backpressure sensor pipe in the exhaust system.

Notes:

A malfunction leads to the injection of the wrong amount of fuel into the engine.

This may affect engine power.

Elimination:

Compare the values ??from the backpressure sensor in the exhaust system, the atmospheric pressure sensor and the charge air pressure sensor with the engine off but the ignition on (power is supplied via terminal U15). All sensors must display current atmospheric pressure.

The cause of the malfunction code generation can be the blocked backpressure sensor pipe in the exhaust system.

Replace the backpressure sensor in the exhaust system if its reading deviates from that of the other sensors.

Make the DTC invalid, as described below:

Make sure the engine is warm.

Turn the ignition key to the power supply position via terminal U15.

Wait 30 seconds.

EMS 1137

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Backpressure sensor in exhaust system

Fault:

The output back pressure sensor readings do not correspond to the charge air pressure.

The reasons:

The malfunction may be due to a failure of the backpressure sensor in the exhaust system, connectors or electrical wiring.

The cause of the malfunction code generation can be the blocked backpressure sensor pipe in the exhaust system.

Notes:

While the DTC is active, the engine power is reduced.

Elimination:

Compare the values ??from the backpressure sensor in the exhaust system, the atmospheric pressure sensor and the charge air pressure sensor with the engine off but the ignition on (power is supplied via terminal U15). All sensors must display current atmospheric pressure.

The cause of the malfunction code generation can be the blocked backpressure sensor pipe in the exhaust system.

Replace the backpressure sensor in the exhaust system if its reading deviates from that of the other sensors.

Make the DTC invalid, as described below:

Make sure the engine is warm.

Turn the ignition key to the power supply position via terminal U15.

Wait 30 seconds.

EMS 1138

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Backpressure sensor in exhaust system

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

A short to ground or open circuit in the output signal or battery voltage.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

Elimination:

Check backpressure sensor in exhaust system, electrical connectors and wiring.

EMS 1139

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Backpressure sensor in exhaust system

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery or lost ground.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

Elimination:

Check backpressure sensor in exhaust system, electrical connectors and wiring.

EMS 1141

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine brakes

Fault:

Motor Retarder Sight Valve Malfunction

The reasons:

There are one or more faults in the engine brake retarder valve.

Notes:

The motor brakes do not operate at full capacity.

Elimination:

Perform the general troubleshooting procedure for components, connectors and retarder motor wiring.

EMS 1143

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine brakes

Fault:

A short circuit to + battery or to ground in the electric circuit of the proportional engine retarder valve.

The reasons:

A short circuit to + battery or to ground in the electric circuit of the proportional engine retarder valve.

Notes:

The engine retarder is deactivated because the retarder motor valve is fully open.

Elimination:

Check the follow valve, as well as electrical connectors and wiring.

EMS 1144

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine brakes

Fault:

Short to battery + in the proportional motor valve of the retarder motor circuit.

The reasons:

Short to battery + in the proportional motor valve of the retarder motor circuit.

Notes:

The engine brake valve of the retarder closes and the engine stops. If a malfunction occurs at a high engine speed, the EGR valve opens to reduce the pressure in the exhaust manifold.

Elimination:

Check the follow valve, as well as electrical connectors and wiring.

EMS 1152

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Cooling Fan

Fault:

Open circuit of the electromagnetic valve of the fan.

The reasons:

There is a fault in the solenoid valve, electrical connectors or electrical wiring.

Notes:

If the fan is electrically operated, it cannot be turned off.

If the fan has a hydraulic drive, it will not work at all.

Elimination:

Check the solenoid valve as well as the electrical connectors and wiring.

EMS 1153

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Additional radiator fan

Fault:

An additional radiator fan circuit breaks.

The reasons:

Additional radiator fan is not connected.

Notes:

No description

Elimination:

Check the fan for additional cooler, as well as electrical connectors and wiring.

EMS 1160

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

EGR valve with a pneumatic cylinder control

Fault:

When an EGR valve receives a request to go to the open position, the EGR valve position sensor T124 indicates a position close to closed.

The reasons:

Possible reasons:

The EGR valve is locked in the closed position or jammed due to mechanical failure or corrosion.

Fault in the cylinder control valve EGR.

The EGR valve cannot open due to a leak in the compressed air pipeline leading to the EGR valve control cylinder.

Malfunction in the air supply to the valve block or malfunction in the valve block, V107.

The EGR Position Sensor T124 is faulty or disconnected from the circuit.

Notes:

After starting the engine, the engine control unit performs an active check on the EGR valve if the following

conditions are met:

The engine runs at idle.

Engine temperature above 60 ° C.

There is no request to turn on the EGR system (0%).

Motor brake is not included.

EGR has been adapted.

The air pressure in the parking brake circuit is at a normal level (above 7.5 bar).

In the event of a fault, the engine control unit shuts off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check:

EGR valve control cylinder by activating the EGR valve using SDP3.

EGR valve for movement without sticking.

The EGR valve control cylinder, connectors and wiring to the T124 position sensor circuit.

The air supply to the control cylinder and valve block V107.

If the EGR valve position sensor T124 is faulty or disconnected from the circuit.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

Be sure to perform basic adjustment and adaptation of the EGR system using SDP3 after corrective actions in the EGR system.

EMS 1061

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor

Fault:

The voltage of the electrical circuit of the exhaust temperature sensor was out of range.

The reasons:

An open in the electrical circuit of the exhaust temperature sensor in front of the SCR catalytic converter.

Notes:

The reagent is not injected or injected in too small a quantity.

Malfunction adversely affects engine emissions of nitric oxide.

On vehicles with NO_x, the warning lamp comes on and the maximum torque is limited to 40%. The fault code cannot be cleared while the fault is present. To become inactive, it requires confirmation from the system.

Elimination:

Check the exhaust gas temperature sensor and its connectors and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 ohms.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 1062

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor

Fault:

Implausible value from the exhaust temperature sensor in front of the SCR catalytic converter.

The reasons:

Exhaust gas temperature sensor malfunction in front of the SCR catalytic converter.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

The reagent is not injected or injected in too small a quantity.

Malfunction adversely affects engine emissions of nitric oxide.

On engines with a NOx control system, the warning lamp comes on and the maximum torque is limited to 40%. The fault code cannot be cleared while the fault is present. To become inactive, the system must recognize it as invalid.

Elimination:

Check the exhaust gas temperature sensor and its connectors and wiring.

On engines with an NOx control system, repair must be confirmed:

Verify that the exhaust temperature sensor is working.

Perform SCR invalidation verification using SDP3.

Or

Four times in a row for 12 minutes, let the engine run at a speed of 1000 rpm and an exhaust gas temperature above 200 ° C with the ignition off between the segments.

If the fault is resolved, the fault code becomes inactive.

EMS 1062

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The constant value of the signal.

The reasons:

The temperature sensor in front of the catalytic converter SCR is faulty.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Use the following options to ensure that the problem is resolved:

To verify that the malfunction has been rectified, perform the “Recognizing DTCs for NOx Control Invalidations” check, which is located on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, follow these steps to make the control unit invalidate the fault.

Start the engine and verify that the engine speed is above 1000 rpm and that the SCR system starts. Repeat this four times in a row. If the temperature is below -8°C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1063

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the temperature sensor in front of the catalytic converter.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 Ω.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1063

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor

Fault:

The voltage of the electrical circuit of the exhaust temperature sensor was out of range.

The reasons:

Short circuit in the electrical circuit of the exhaust temperature sensor in front of the catalytic converter SCR.

Notes:

The reagent is not injected or injected in too small a quantity.

Malfunction adversely affects engine emissions of nitric oxide.

Elimination:

Check the exhaust gas temperature sensor and its connectors and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 ohms.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 1064

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor in front of the catalytic converter.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 Ω.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1068

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Temperature sensor after SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor after the catalytic converter.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 Ω.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1068

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor

Fault:

The voltage of the electrical circuit of the exhaust temperature sensor was out of range.

The reasons:

Short circuit in the electrical circuit of the temperature sensor of the exhaust gases after the catalytic converter SCR.

Notes:

The reagent is not injected or injected in too small a quantity.

Malfunction adversely affects engine emissions of nitric oxide.

On vehicles with NO_x, the warning lamp comes on and the maximum torque is limited to 40%. The fault code cannot be cleared while the fault is present. To become inactive, it requires confirmation from the system.

Elimination:

Check the exhaust gas temperature sensor and its connectors and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 ohms.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 1069

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor

Fault:

The voltage of the electrical circuit of the exhaust temperature sensor was out of range.

The reasons:

An open in the electrical circuit of the exhaust temperature sensor after the SCR catalytic converter.

Notes:

The reagent is not injected or injected in too small a quantity.

Malfunction adversely affects engine emissions of nitric oxide.

On vehicles with NO_x, the warning lamp comes on and the maximum torque is limited to 40%. The fault code cannot be cleared while the fault is present. To become inactive, it requires confirmation from the system.

Elimination:

Check the exhaust gas temperature sensor and its connectors and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 ohms.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 1069

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Temperature sensor after SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor after the catalytic converter.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Disconnect the sensor and measure the resistance. At a temperature of 10 – 30 ° C, the resistance should be in the range of 207 – 222 Ω.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1070

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EGR actuator

Fault:

EGR actuator open in open position.

The reasons:

Jammed or moved with great difficulty.

Notes:

Engine performance is deteriorating.

Increased emissions of soot particles; smoke may be present.

Elimination:

Using SDP3, check the movement of the EGR valve. Make sure the valve can move freely.

Check the connectors and wiring.

EMS 1071

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EGR actuator

Fault:

The EGR actuator is stuck in the closed position.

The reasons:

The EGR actuator is jammed in the closed position due to a mechanical failure.

The EGR valve cannot open due to a leak in the compressed air line.

The position sensor EGR valve is not working.

Notes:

No description

Elimination:

Check the EGR valve actuator and make sure the valve can move freely.

Check the compressed air supply.

Check connector A6_10.

Check the EGR valve position sensor T124, electrical connectors and wiring.

After replacing the control cylinder, EGR valve, or T124 EGR valve position sensor, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 1136

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Backpressure sensor in exhaust system

Fault:

Implausible back pressure in the exhaust system.

The reasons:

Possible reasons:

The value shown by the back pressure sensor in the exhaust system is too high or too low compared to signals from other pressure sensors.

Faulty electrical connector or sensor wiring.

Notes:

A malfunction leads to the injection of the wrong amount of fuel into the engine.

This may affect engine power.

Elimination:

Compare the values from the backpressure sensor in the exhaust system, the atmospheric pressure sensor and the charge air pressure sensor with the engine off but the ignition on (power is supplied via terminal U15). All sensors must display current atmospheric pressure.

Replace the backpressure sensor in the exhaust system if its reading deviates from that of the other sensors.

Make the DTC invalid, as described below:

Make sure the engine is at normal operating temperature.

Turn the ignition key to the power supply position via terminal U15.

Wait 30 seconds.

EMS 1137

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Backpressure sensor in exhaust system

Fault:

The output back pressure sensor readings do not correspond to the charge air pressure.

The reasons:

The malfunction may be due to a failure of the backpressure sensor in the exhaust system, connectors or electrical wiring.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Compare the values ??from the charge-air sensor, the atmospheric pressure sensor and the back-pressure sensor in the exhaust system with the engine off but the ignition on (power is supplied via terminal U15).

Clear the fault code. To do this, first warm up the engine. Turn off the engine, but leave the ignition key in the powering position via terminal U15. The DTC clears within 30 seconds.

EMS 1138

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Backpressure sensor in exhaust system

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

A short to ground or open circuit in the output signal or battery voltage.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Check backpressure sensor in exhaust system, electrical connectors and wiring.

EMS 1139

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Backpressure sensor in exhaust system

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery or lost ground.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Check backpressure sensor in exhaust system, electrical connectors and wiring.

EMS 1141

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Motor brakes.

Fault:

Motor Retarder Sight Valve Malfunction

The reasons:

There are one or more faults in the engine brake retarder valve.

Notes:

The engine brake has limited functionality.

Elimination:

Perform the general troubleshooting procedure for components, connectors and retarder motor wiring.

EMS 1143

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Motor brakes.

Fault:

Short to battery or ground in the motor brake servo valve circuit.

The reasons:

Short to battery or ground in the motor brake servo valve circuit.

Notes:

The engine brake does not work due to the fact that the engine brake valve is fully open.

Elimination:

Check the follow valve, as well as electrical connectors and wiring.

EMS 1144

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Motor brakes.

Fault:

Short to battery + in the motor brake servo valve circuit.

The reasons:

Short to battery + in the motor brake servo valve circuit.

Notes:

The engine brake valve closes, the engine stops. If a malfunction occurs at high engine speeds, the EGR valve opens to reduce the pressure in the exhaust manifold.

Elimination:

Check the follow valve, as well as electrical connectors and wiring.

EMS 1152

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cooling Fan

Fault:

Open in the fan solenoid circuit.

The reasons:

There is a fault in the solenoid valve, electrical connectors or electrical wiring.

Notes:

If the fan is electrically operated, it cannot be turned off.

If the fan is hydraulically driven, it will not operate.

Elimination:

Check the solenoid valve as well as the electrical connectors and wiring.

EMS 1153

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Additional cooler fan

Fault:

An open in the electric circuit of the additional cooler fan.

The reasons:

Extra cooler fan not included.

Notes:

No description

Elimination:

Check the fan for additional cooler, as well as electrical connectors and wiring.

EMS 1155

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fan speed

Fault:

The signal from the fan speed sensor was below the normal value.

The reasons:

Possible reasons:

Faulty fan speed sensor or in its connections.

V-ribbed belt torn.

Mechanical failure of the fan, preventing the normal rotation of the fan.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

The fan operates without feedback on fan speed. This means that the fan control is not optimal.

This means a decrease in cooling efficiency under certain operating conditions and an increase in noise at low vehicle speeds.

Elimination:

Make sure the fan rotates correctly.

Ensure there is a voltage supply (12 V) to the sensor.

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 1160

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EGR valve with a pneumatic cylinder control

Fault:

When an EGR valve receives a request to go to the open position, the EGR valve position sensor T124 indicates a position close to closed.

The reasons:

Possible reasons:

The EGR valve is locked in the closed position or jammed due to mechanical failure or corrosion.

Fault in the cylinder control valve EGR.

The EGR valve cannot open due to a leak in the compressed air pipeline leading to the EGR valve control cylinder.

Malfunction in the air supply to the valve block or malfunction in the valve block, V107.

The EGR Position Sensor T124 is faulty or disconnected from the circuit.

Notes:

After starting the engine, the engine control unit performs an active check on the EGR valve if the following conditions are met:

The engine runs at idle.

Engine temperature above 60 ° C.

There is no request to turn on the EGR system (0%).

Motor brake is not included.

EGR has been adapted.

The air pressure in the parking brake circuit is at a normal level (above 7.5 bar).

In the event of a fault, the engine control unit shuts off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check:

EGR valve control cylinder by activating the EGR valve using SDP3.

EGR valve for movement without sticking.

EGR valve control cylinder, connectors and wiring in the T124 position sensor circuit.

The air supply to the control cylinder and valve block V107.

If the EGR valve position sensor T124 is faulty or disconnected from the circuit.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

After replacing the control cylinder, EGR valve or EGR T124 position sensor, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 1161

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR valve tracking

Fault:

There is an electrical fault in the EGR follow valve.

The reasons:

Possible reasons:

An open circuit or short to ground (U31) in the follower circuit.

Malfunction or disconnection of contacts, connectors or electrical wires of the follower valve.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

The DTC can be cleared in an inactive state.

Elimination:

Check the proportional EGR valve and electrical components, connectors and wiring.

Check that the resistance of the EGR actuator is approximately 30 ohms at 20 ° C.

Make sure that the repair is made correctly by warming up the engine to a temperature above 60 ° C with intake air pressure more than 7 bar. Then let the engine idle for more than 10 seconds. If the repair has been performed correctly, the malfunction code will be inactive.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 1168

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR valve tracking

Fault:

EGR follower malfunction.

The reasons:

There is probably a short circuit to + battery in the watchdog circuit. In rare cases, the cause of a malfunction can also be a combination of several EGR valve failures and an EGR servo valve.

Notes:

As long as this DTC remains active, it is not possible to control the follow valve. Inadvertent activation of the follow-up valve may occur. Adaptation of the mass flow sensor is disabled.

The fault code cannot be cleared while the fault is present.

Elimination:

If there are other fault codes related to the EGR valve or the EGR servo valve (even if they are not active), first troubleshoot based on these codes.

Check the proportional EGR valve and electrical components, connectors and wiring.

Turn the key to the driving position to ensure that the circuit is repaired correctly. If the repair has been performed correctly, the malfunction code will be inactive.

EMS 1298

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter.

Fault:

The starter is not activated during the start attempt.

The reasons:

Open in the magnetic coil of the starter.

Notes:

The starter is not activated during the start attempt.

Elimination:

Check the electromagnetic coil, as well as the elements of the electrical circuit, electrical connectors and electrical wiring.

EMS 1313

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil pressure sensor

Fault:

One or more faults in the oil pressure sensor.

The reasons:

The malfunction is caused by the fact that several different malfunctions occur simultaneously in the element.

Notes:

Possibly incorrect value from the oil pressure sensor.

Elimination:

Perform a general troubleshooting procedure for this item. Check the electrical components, electrical connectors and wiring. If other trouble codes are generated, first troubleshoot them.

EMS 1314

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil pressure sensor

Fault:

The voltage in the electrical circuit was below normal.

The reasons:

A short to ground or open circuit in the output signal or battery voltage.

Notes:

The instrument panel shows no oil pressure, regardless of whether there is sufficient oil pressure.

Low oil pressure warning light is off.

Elimination:

Check the oil pressure sensor, electrical connectors and wiring.

EMS 1314

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Oil pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the oil pressure sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the mass flow sensor.

Notes:

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument panel shows 0 bar regardless of engine speed. The warning lamp for emergency oil pressure does not turn on.

Elimination:

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

EMS 1315

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil pressure sensor

Fault:

The voltage in the electrical circuit was above normal.

The reasons:

Short to battery or lost ground.

Notes:

The instrument panel shows no oil pressure, regardless of whether there is sufficient oil pressure.

Low oil pressure warning light is off.

Elimination:

Check the oil pressure sensor, electrical connectors and wiring.

EMS 1315

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Oil pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the oil pressure sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the mass flow sensor.

Notes:

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument panel shows 0 bar regardless of engine speed. The warning lamp for emergency oil pressure does not turn on.

Elimination:

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical

wiring.

EMS 1316

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil pressure sensor

Fault:

The signal from the oil pressure sensor in the engine lubrication system is below the normal value. This means that the oil pressure, measured at a certain speed, is lower than normal.

The reasons:

A possible reason is that one of the following valves in the lubrication system is jammed in the open position:

Safety valve located in the housing of the oil pump.

Pressure reducing valve, usually located in the housing of the centrifugal oil purifier.

Other causes may be a damaged oil pump, oil filter, centrifugal oil cleaner, suction tube and / or low oil level in the oil pan.

Clogging the suction strainer may be another possible cause.

Notes:

Excessively low oil pressure can cause serious damage to the engine and cause it to break.

The control lamp for low oil pressure is on.

Elimination:

Check the valves in the oil system and check for damage to the oil pump, oil filter, centrifugal oil purifier, suction tube and suction strainer. Also check the oil level in the crankcase.

EMS 1318

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fan speed sensor

Fault:

The power supply voltage of the fan speed sensor was below normal.

The reasons:

Possible reasons:

Electrical connectors or electrical leads to the fan have been damaged.

Malfunction of the fan speed or coolant speed sensor electrical circuit.

Notes:

Low engine cooling efficiency. Risk of engine overheating.

The fan speed sensor and the coolant pump have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

Elimination:

Check the fan solenoid valve as well as the electrical connectors and wiring.

Check fan speed sensor and coolant pump with connectors and electrical wiring.

EMS 1376

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value. It was 47 V or more for 0.5 seconds.

The reasons:

This fault may be caused by the operation of the starter charger.

Notes:

If the speed is not recorded, the engine stops immediately without a delay. If the engine is recording the engine speed, the engine will continue to idle for 5 minutes. After that, the engine will stop.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 1378

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

Battery voltage was below acceptable value. For 5 seconds, the battery voltage was in the range of 9 ... 21.44 V.

The reasons:

It is possible that this fault is caused by a defective alternator or battery circuit. It is also possible that the power of simultaneously enabled consumers is too high.

Notes:

A crankshaft speed of less than 400 rpm during engine start is not considered a malfunction.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 1378

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Battery voltage

Fault:

Battery voltage when the engine is at idle was below the allowable value.

The reasons:

It is possible that this fault is caused by a defective generator or battery circuit. Another reason may be too high current consumption.

Notes:

Starting the engine is difficult and certain high current-consuming functions are deactivated . Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

Check the power and consumption of the system.

EMS 1379

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value.

The reasons:

Generator malfunction may result in too high charging current.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Check the generator and measure the system voltage.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 1379

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value. Within 5 seconds, the battery voltage was more than 30.56 V.

The reasons:

The failure of the generator can be, for example, an increase in the voltage of the on-board network to 36 V.

Notes:

If the voltage at the terminals of the battery for 15 minutes will be in the range of 30.56 ... 47 V, the engine will automatically go into idle mode.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 1592

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Initiation of the throttle operating range at engine start gives the wrong value.

The reasons:

The throttle potentiometer cannot find the throttle zero mode.

The throttle adaptation ended in failure.

There may be a fault in the throttle potentiometer.

Notes:

The engine goes into emergency mode.

Elimination:

Check fuses.

Check the power supply of the potentiometers and the actuator throttle.

Check wiring and connectors.

EMS 1594

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator 1

Fault:

The generator shows:

that it does not perform charging, although it is on, i.e. at engine speeds that are equal to or above idle

that it performs charging, although not included, i.e. at engine speeds that are equal to or below idle

The reasons:

Short circuit or open circuit generator.

Notes:

The poor state of the power supply system. Functions that consume a large amount of current and therefore require charging system performance will be disabled. Examples of these functions are: low beam, seat heating and heated rear view mirrors.

The engine control unit switches off the exhaust gas recirculation system. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check electrical connectors, wiring and alternator.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler

following the instructions given in the manual for service stations, subgroup 01-65.

EMS 1601

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas pressure sensor

Fault:

Deviation of the reference voltage of the gas pressure sensor.

The reasons:

Faulty gas pressure sensor or short circuit in the electrical circuit.

Notes:

The engine stops or goes into fail-safe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring.

Check the supply voltage of the sensor and engine control unit.

EMS 1602

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas pressure sensor

Fault:

Gas pressure sensor reference voltage too low

The reasons:

A short to ground in the supply voltage circuit of the gas pressure sensor.

Motor control supply voltage too low.

Notes:

The engine stops or goes into fail-safe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring.

Check the supply voltage of the sensor and engine control unit.

EMS 1603

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas pressure sensor

Fault:

Gas pressure sensor reference voltage too high.

The reasons:

Short to battery + in the gas supply voltage sensor voltage supply circuit.

Motor control supply voltage too high.

Notes:

The engine stops or goes into failsafe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring.

Check the supply voltage of the sensor and engine control unit.

EMS 1617

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle Voltage Reference Deviation.

The reasons:

Damaged throttle or short circuit.

Notes:

The engine stops or goes into failsafe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring. Replace throttle valve.

EMS 1618

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle reference voltage too low

The reasons:

Short circuit to ground on the throttle circuit or battery voltage too low.

Notes:

The engine stops or goes into failsafe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring. Replace throttle valve.

EMS 1619

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle valve

Fault:

Throttle reference voltage too high.

The reasons:

Short circuit on the throttle electric circuit + battery or battery voltage too high.

Notes:

The engine stops or goes into failsafe mode of operation. Torque is reduced to protect the engine.

Elimination:

Check the element, connectors and wiring. Replace throttle valve.

EMS 1681

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cooling Fan

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground on the fan solenoid circuit.

Notes:

If the fan is electrically controlled, it cannot be turned off.

If the fan is hydraulically controlled, it will not operate.

Elimination:

Check the electromagnetic winding of the fan, as well as the elements of the electrical circuit, electrical connectors and wiring.

EMS 1682

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cooling Fan

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short to battery + in the fan solenoid circuit.

Notes:

If the fan is controlled hydraulically, it cannot be turned off.

If the fan is electrically controlled, it will not operate.

Elimination:

Check the electromagnetic winding of the fan, as well as the elements of the electrical circuit, electrical connectors and wiring.

EMS 1683

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cooling fan for additional cooler

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground in the electrical circuit of the auxiliary cooler fan.

Notes:

If the fan is electrically controlled, it cannot be turned off.

If the fan is hydraulically controlled, it will not operate.

Elimination:

Check the electromagnetic winding of the fan, as well as electrical connectors and wiring.

EMS 1684

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cooling fan for additional cooler

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short to battery + in the additional circuit of the additional cooler fan.

Notes:

If the fan has a hydraulic drive, it cannot be turned off.

If the fan has an electric drive, it will not operate.

Elimination:

Check the electromagnetic winding of the fan, as well as electrical connectors and wiring.

EMS 1800

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine crankshaft speed sensor

Fault:

Incorrect value from engine speed sensor.

The reasons:

Fault in the electrical circuit.

Notes:

Failsafe mode: Limit torque and engine speed. Increased idling speed.

Elimination:

Check the connectors and electrical wiring. Replace sensor.

EMS 1830

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine crankshaft speed sensor

Fault:

Incorrect value from engine speed sensor.

The reasons:

Fault in the electrical circuit.

Notes:

Emergency mode: Limit torque and engine speed. Increased idling speed.

Elimination:

Check the connectors and electrical wiring. Replace sensor.

EMS 1831

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine crankshaft speed sensor

Fault:

No signal from engine speed sensor

The reasons:

The sensor may not be connected to ground.

Notes:

The engine goes into failsafe mode of operation. Engine does not start again after shutdown.

Elimination:

Check the element, connectors and wiring. Replace engine speed sensor.

EMS 2065

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Circuit

Fault:

Coupling slips

The reasons:

Possible reasons:

The clutch is worn.

The car has been modified so that the gearbox does not match the vehicle's SOPS file.

The speed sensor is located incorrectly.

Notes:

The engine control unit reduces torque until the clutch stops slipping.

Elimination:

If repair and maintenance has not been done recently:

Check for actual clutch slippage.

If repair and maintenance has been done recently:

Check that the appropriate gearbox type (correct SOPS file) is programmed in the vehicle.

Check the vehicle speed sensor for proper location.

EMS 4096

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed

Fault:

The engine speed exceeded the allowable value.

The reasons:

Incorrect handling, for example, incorrectly shifted to a lower gear.

Notes:

The fuel supply to the engine stops at 3000 rpm. Restoration of the fuel supply occurs after the engine speed becomes less than 3000 rpm. In this case, the engine braking mechanism works with maximum efficiency. After reducing the engine speed, normal engine operation is restored.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4097

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed

Fault:

The engine speed exceeded the allowable value.

The reasons:

Incorrect handling, for example, incorrectly shifted to a lower gear.

Notes:

The fuel supply to the engine stops at 3000 rpm. Restoration of the fuel supply occurs after the engine speed becomes less than 3000 rpm. In this case, the engine braking mechanism works with maximum efficiency. After reducing the engine speed, normal engine operation is restored.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4098

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Start the engine four times in a row. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The control unit must check in four consecutive cycles, which means that the engine should be started four times in a row.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms the repair are satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4102

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pump does not raise the pressure in the SCR system for a given time.

The reasons:

A malfunction may be due to one of the following reasons:

Reagent tank is empty.

The reagent tank vent is blocked.

Tank pre-filter or main filter blocked.

Reagent lines are leaking or clogged.

The heating system in the tank is not able to defrost the reagent during cold weather.

Reagent dispenser does not close completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check if there is already some reagent in the tank and make sure that it is not frozen.

Check to see if the vent is clogged tank reagent channel.

Check lines and connections for leaks and blockages.

Check whether the prefilter filter, main filter or filter in the combination tank is clogged.

Check if the reagent tank is working.

Ensure the reagent dispenser closes completely.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

Start the engine and turn it off.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4103

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pressure in the SCR system does not fall as expected when opening the solenoid valve in the return line.

The reasons:

A fault code can be generated if the reagent tank vent is plugged.

The cause of the fault can also be:

The reagent return line is blocked, or the solenoid valve does not open as it should.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check if the reagent tank is not blocked.

Make sure the reagent in the return line is not frozen. If the reagent is frozen : Check that the engine coolant level is not too low.

To check if the return pipe heating is working. Start the engine and make sure the piping is getting warm. If not, make sure the engine coolant reaches it as it should be.

Also ensure that the solenoid valve opens fully. If the heat is normal, check that the return line is not blocked.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can perform the following actions so that the control unit recognizes the failure as invalid:

Start the engine and turn it off.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4104

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Data exchange between the NO_x sensor after the catalytic converter and the SCR control unit.

Fault:

The SCR control unit receives several CAN messages from the NO_x sensor in too fast a sequence.

The reasons:

Failure to communicate between the NO_x sensor and the SCR control unit.

Notes:

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical wiring and clean the connectors.

If this does not help, replace the NOx sensor.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the onboard power supply with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4105

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Data exchange between the NOx sensor after the catalytic converter and the SCR control unit.

Fault:

The SCR control unit does not receive the CAN message from the NOx sensor.

The reasons:

Data transfer between the NOx sensor and the SCR control unit is not working.

If the malfunction code occurs once, it may be due to the replacement of the NOx sensor.

If the fault code repeats, there is probably a fault in the electrical supply voltage circuit to the NOx sensor, NOx sensor, electrical connectors or wiring.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical wiring and clean the connectors.

If this does not help, make sure that the SCR control unit receives the ignition voltage (U15) and there is a voltage supply to the NOx sensor control unit.

If this does not help, replace the NOx sensor.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4106

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

Problem with CAN bus communication with NOx sensor after catalytic converter.

The reasons:

The malfunction may be caused by the loss of power supply to the NOx sensor and the simultaneous power supply to the SCR control unit.

If the fault recurs frequently, there is probably a fault in the connectors or the wiring.

Notes:

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

Elimination:

Check the wiring and clean the connectors. Ensure that power is simultaneously supplied to the SCR control unit and the NOx sensor.

If this does not help, first replace the NOx sensor, and if that does not help, replace the SCR control unit.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4106

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx sensor connection

Fault:

The engine control unit has no CAN message from the NOx sensor. If the vehicle is equipped with an SCR system, the CAN message is transmitted via the SCR control unit.

The reasons:

Communication between the engine control unit and the SCR control unit or between the SCR control unit and the NOx sensor is interrupted.

If a malfunction code 4108 was generated at the same time, there may be a problem in the communication between the engine control unit and the SCR control unit.

If a malfunction code 4108 was generated at the same time, there may be a communication failure between the SCR control unit and the NOx sensor.

If the DTC was generated only once, it may be due to the interruption of the voltage supply to the NOx sensor while maintaining the voltage supply to the SCR control unit.

The SCR control unit in the main unit may be faulty.

If a fault code is generated frequently, it may be due to a problem in the wiring harness or connectors.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Also check for DTCs related to CAN communication in other control units. Troubleshoot these problems first.

Check the wiring and clean the connectors.

If this does not help, check whether the SCR control unit and the NOx sensor are receiving an on / off voltage (U15) signal simultaneously. If the above action does not help, replace the NOx sensor first, and if that does not work, replace the SCR control unit. However, it is not typical for the fault to be covered in the SCR control unit. Before replacing the SCR control unit, make sure that the fault is not caused by something else.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the onboard power supply with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4107

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Communication with the SCR control unit

Fault:

CAN MSG8 message “NOx sensor data before catalytic converter” (NOx sensor data before catalytic converter) is not received from NOx sensor. If the vehicle configuration is configured for an SCR system, this message is received via the SCR control unit.

The reasons:

The data exchange between the engine control unit and the NOx sensor in front of the catalytic converter was interrupted.

On vehicles with the SCR system, this message is sent via the SCR control unit. If a 100C fault code was generated at the same time, there may be a communication failure between the engine control unit and the SCR control unit. See fault code description 100C.

If the vehicle is equipped with an SCR system and the DTC 10C was not generated simultaneously, there may be a communication failure between the SCR control unit and the NOx sensor in front of the catalytic converter.

If the DTC was generated only once, it may be due to the interruption of the voltage supply to the NOx sensor while maintaining the voltage supply to the SCR control unit. If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

Notes:

No description

Elimination:

Clear the DTC memory and try to start the engine.

Turn off and turn on the onboard power supply with the ignition key several times.

If the DTC is generated again, check the wiring and clean the electrical connectors.

If the fault code is still generated, make sure that both the SCR control unit and the NOx sensor in front of the catalytic converter receive voltage through terminal U15 simultaneously.

If the fault is not detected, first replace the NOx sensor for the catalytic converter and then the SCR control unit (if equipped with the car).

EMS 4107

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

Problem with CAN bus communication with NOx sensor in front of the catalytic converter.

The reasons:

The malfunction may be caused by the loss of power supply to the NOx sensor and the simultaneous power supply to the SCR control unit.

If the fault recurs frequently, there is probably a fault in the connectors or the wiring.

Notes:

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check the wiring and clean the connectors. Ensure that power is simultaneously supplied to the SCR control unit and the NOx sensor.

If this does not help, first replace the NOx sensor, and if that does not help, replace the SCR control unit.

To verify that the problem is resolved, follow these steps:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4108

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR control unit

Fault:

The data exchange between the engine control unit and the SCR control unit has been stopped.

The reasons:

The malfunction may be due to the loss of power to the SCR control unit and the simultaneous powering of the engine control unit.

If the fault recurs frequently, there is probably a fault in the connectors or the wiring.

Notes:

Reagent injection is deactivated.

As data exchange stops, no additional DTCs for the SCR system are generated.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

If there are other DTCs for the SCR system, first diagnose them.

Turn off and turn on the ignition with the ignition key several times. If there is no fault code indicating that the SCR system is off, check the wiring and clean the electrical connectors. Make sure the fuses for the SCR system are not blown.

Make sure that both control units are powered at the same time.

If the steps above do not help, replace the SCR control unit. If this does not help, replace the engine control unit.

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4108

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Communication with the SCR control unit

Fault:

The engine control unit does not receive a CAN message from the NOx sensor. If the vehicle is equipped with an SCR system, the CAN message is transmitted via the SCR control unit.

The reasons:

Communication between engine control unit and SCR control unit interrupted.

If there are several faults, the SCR control unit shuts down the SCR system to prevent damage. This means that communication between the SCR control unit and the engine control unit has been lost.

If this DTC is generated alone and there are no other DTCs of the SCR system, this may be due to the interruption of the supply voltage to the SCR control unit while simultaneously supplying voltage to the engine control unit.

The SCR control unit in the pump may be faulty.

If a fault code is generated frequently, it may be due to a problem in the wiring harness or connectors.

If fault code 5688 was generated at the same time, there may be a fault in the engine control unit.

If this DTC was generated, and DTC 5688 is not, it is possible that there is a fault in the wiring.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Fault codes are generated based on information from the SCR control unit. If there is no communication between the SCR control unit and the engine control unit, no SCR related fault codes are generated in the engine control unit.

If this DTC is generated, there is no communication between the engine control unit and the SCR control unit. This may imply that there are no SCRs related to the SCR in the engine control unit, and those that have been erased will not be generated again, even if there is still a fault.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

If there are fault codes for the SCR system, first diagnose them.

Switch the ignition on and off several times. Fault codes that were not generated in the engine control unit could be present in the SCR control unit, because this fault code is active.

If there is no fault code indicating that the SCR system is currently disconnected, check the wiring and clean the electrical connectors. Make sure the fuses for the SCR system are not blown.

Also make sure that both control units receive ignition signals at the same time (U15).

If the steps above do not help, replace the SCR control unit. If this does not help, replace the engine control unit.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4109

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Incorrect CAN version

Fault:

The engine control unit and the SCR control unit do not agree on which CAN version is used.

The reasons:

A fault occurs if one of the control units has been replaced and they are not compatible with each other.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the spare part number of the control unit and replace the control unit that has the wrong spare part number.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4110

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

NOx sensor in front of the catalytic converter did not start within the specified time.

The reasons:

NOx sensor malfunction.

Notes:

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. After the malfunction has been rectified, in order for the malfunction code to become inactive, the control unit must verify this.

Elimination:

Replace the NOx sensor. After the startup phase, the fault code must be inactive.

EMS 4111

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

The NOx sensor after the catalytic converter did not start within the specified time.

The reasons:

NOx sensor malfunction.

Notes:

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. After the malfunction has been rectified, in order for the malfunction code to become inactive, the control unit must verify this.

Elimination:

Replace the NOx sensor. After the startup phase, the fault code must be inactive.

EMS 4112

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed

Fault:

The crankshaft speed for some period exceeded the permissible value.

The reasons:

This malfunction may be caused by difficult gear changes or fuel ingress into the oil.

Notes:

The engine retarder was activated to reduce the engine speed. With this fault, the maximum torque of the engine is reduced by 30 %. Increased engine speed at idle will also be lower than usual.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds. Check for fuel leaks.

EMS 4113

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed

Fault:

The crankshaft speed for some period exceeded the permissible value.

The reasons:

This DTC may be due to poor gear changes, but it may also be due to the retarder motor brakes.

Notes:

The engine retarder was activated to reduce the engine speed. Check whether a fault code 4112 is generated at the same time.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4114

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pump does not raise the pressure in the SCR system for a given time.

The reasons:

A malfunction may be due to one of the following reasons:

Reagent tank is empty.

The reagent tank vent is blocked.

Tank pre-filter or main filter blocked.

Reagent lines are leaking or clogged.

The heating system in the tank is not able to defrost the reagent during cold weather.

Reagent dispenser does not close completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check if there is already some reagent in the tank and make sure that it is not frozen.

Check to see if the vent is clogged tank reagent channel.

Check lines and connections for leaks and blockages.

Check whether the prefilter filter, main filter or filter in the combination tank is clogged.

Check if the reagent tank is working.

Ensure the reagent dispenser closes completely.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

Start the engine and turn it off.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4115

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pressure in the SCR system does not fall as expected when the injection valve is open.

The reasons:

The cause of the malfunction may be:

Reagent freezing in the injection pipe.

Freezing or crystallization of the reagent in the dispenser, piping or spray nozzle of the reagent.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure that the engine coolant level is not too low.

To verify that the heating line between the main unit and the reagent dispenser is working. Start the engine and make sure the suction line gets warm. Otherwise, make sure that the coolant from the engine reaches the line as it should be. Also ensure that the water valve opens fully.

If heat is present, remove and clean the nozzle sprayer, reagent dispenser and piping.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of

the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

Start the engine and turn it off.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4116

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

Air pressure in SCR system too high.

The reasons:

A malfunction may be due to one of the following reasons:

The formation of crystals in the nozzle sprayer or the pipe between the reagent dispenser and the nozzle sprayer.

The air line between the main unit and the reagent dispenser is plugged or twisted.

Malfunction in additive dispenser.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check whether the injection device or the pipeline is not blocked between the reagent dispenser and the injection device.

Check the air line between the main unit and the reagent dispenser for any blockage or twist.

Replace additive dispenser.

If the problem persists, replace the main unit.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

There should be no other active DTCs for air pressure in the SCR system and for faults in the main unit.

Make sure the SCR system starts up and perform a road test of a vehicle lasting 15 minutes four times in succession. Switch off the ignition with the key at intervals of 90 seconds between cycles.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4116

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

Air pressure is too high.

The reasons:

May be due to the following:

The formation of crystals in the nozzle sprayer or the pipe between the reagent dispenser and the nozzle sprayer.

The air line between the main unit and the reagent dispenser is blocked.

Malfunction in additive dispenser.

Notes:

Reagent injection is deactivated.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check whether the injection device or the pipeline is not blocked between the reagent dispenser and the injection device.

Check the air line between the main unit and the reagent dispenser for any blockage.

Replace additive dispenser. If the fault still persists after this, replace the SCR main unit. Perform SCR system checks in SDP3.

In order to ensure that the malfunction has been rectified, in SDP3, recognize the invalidity of the malfunction codes of the NO_x control system. This operation should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust gas hose will be damaged.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4118

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Ensure that the diaphragm pump is not clogged or damaged. If there is damage, replace the diaphragm pump.

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4119

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Ensure that the diaphragm pump is not clogged or damaged. If there is damage, replace the diaphragm pump.

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4120

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the

instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 30 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4121

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Ensure that the diaphragm pump is not clogged or damaged. If there is damage, replace the diaphragm pump.

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4122

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR system emergency stop

Fault:

The SCR system was turned off.

The reasons:

The SCR system was turned off due to too high temperature in the main unit.

Notes:

If the temperature drops to an acceptable level, the SCR system starts up again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for any other DTCs that have been generated and may have caused this DTC, and use them to troubleshoot.

Continue as follows to ensure that the problem is resolved:

Switch off the ignition with the key, wait at least 90 seconds and then turn it on again with the key for 25 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4122

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

The temperature limit for the main SCR unit has been exceeded.

The reasons:

The SCR system was deactivated due to the too high temperature of the main unit.

Notes:

If the temperature drops to an acceptable level, the system will start again.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

If there are other DTCs for the SCR system, first diagnose them.

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4123

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply to elements in the SCR system

Fault:

The voltage in the electrical supply circuit of the reagent dispenser was out of range.

The reasons:

Short to battery + in the reagent dispenser electrical circuit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the reagent dispenser, its connectors and wiring.

Check the battery voltage.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4124

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply to elements in the SCR system

Fault:

The voltage in the electrical supply circuit of the reagent dispenser was out of range.

The reasons:

Interruption in the electric supply circuit of the reagent dispenser.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the reagent dispenser, its connectors and wiring.

Check the battery voltage.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4128

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR reagent pressure

Fault:

The reagent pressure at start-up drops by more than 0.5 bar.

The reasons:

The vent valve is stuck open or there are leaks in the reagent hose.

Notes:

The SCR system is turned off until the next cycle of motion begins (ignition is switched off with the key) and any reagent is injected, which leads to an increase in the level of discharge. When the system is turned off, fault codes 100C, 100A and 100B (CAN time exceeded) can be generated. Be sure to troubleshoot this problem before taking action on codes 100C, 100A, and 100B.

Note: Diagnostics regarding this DTC cannot be performed while the SCR system is off. Therefore, this DTC cannot become passive or be generated again (if deleted) before the next cycle of motion. In order to be able to read the fault codes, turn off the ignition with the key for 90 seconds and then turn it on again.

Elimination:

Check whether the vent valve is open in the open position. Check reagent hose for leaks.

EMS 4129

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Injection Valve

Fault:

With injection, the pressure in the SCR system does not decrease as expected.

The reasons:

This may be due to a blockage in the injection valve, on the release of the main unit, or in the hose between the main unit and the injection valve.

Notes:

As a result of this fault, the SCR system shuts down.

When the ambient temperature is below -10°C , a malfunction may result in damage to the injection valve in the reagent dispenser.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure the hose is not twisted.

Check whether reagent crystals are present in the reagent dispenser or main unit. Wash off the crystals with water.

If the temperature was below -10°C , check to see if the injection valve in the reagent dispenser is leaking.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors because the exhaust gas temperature becomes very high and there is a risk that the exhaust gas hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

Verify that the SCR system is running four times in sequence. Switch off the ignition with the key at intervals of 90 seconds between cycles.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4129

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Emergency stop engine on request DLN 1

Fault:

No description

The reasons:

No description

Notes:

No description

Elimination:

Restart engine

EMS 4130

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

An improbable signal at startup.

The reasons:

Input data is not recorded when the ignition is turned on.

Notes:

No description

Elimination:

On engines with an NOx control system, to eliminate the problem, you must turn off the ignition with a key, wait 90 seconds and then turn it on again.

EMS 4130

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR switch

Fault:

Digital inputs are not recorded when the ignition is turned on with a key.

The reasons:

No description

Notes:

No description

Elimination:

For engines with NOx control, this problem is resolved as follows:

Switch off the voltage, wait 90 seconds.

Turn on the voltage again.

If the fault is resolved, the digital fault code becomes inactive.

EMS 4131

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply for SCR control unit

Fault:

The SCR control unit turns off too soon. The power to the SCR system was turned off before the system was turned off.

The reasons:

If the car has a mass switch (used in buses and ADR cars), a fault code can be generated if the battery mass switch is used within 90 seconds after the ignition is turned off.

There may be a fault in the supply voltage to the SCR system.

In addition, the malfunction may be due to an internal malfunction in the control unit.

If at the same time a fault code 5657 is generated, the fault is probably not in the SCR system.

Notes:

Full system shutdown will not be performed. It takes approximately 90 seconds to turn off the SCR system after the ignition key is turned off.

This means that a reagent will remain in the hoses and in the nozzle dispenser.

This can cause the system to freeze in cold weather, which is likely to cause damage to the SCR system.

Elimination:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the DTC remains inactive, delete the DTC.

If the fault code persists and at the same time no fault code 5657 has been generated, check the power supply to the main unit.

If the fault lies in the main unit, it should be replaced.

EMS 4132

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply for SCR control unit

Fault:

The SCR control unit shuts down too late.

The reasons:

Internal fault in the main unit or faulty wiring of the SCR control unit.

Notes:

SCR system does not turn off.

The current is still consumed, which can lead to a low battery.

Elimination:

Check electrical wiring.

If the fault lies in the main unit, it should be replaced.

EMS 4133

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

Continue as follows to ensure that the problem is resolved:

Switch off the ignition with the key, wait at least 90 seconds and then turn it on again with the key for 30 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4134

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated . Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

Continue as follows to ensure that the problem is resolved:

Switch off the ignition with the key, wait at least 90 seconds and then turn it on again with the key for 30 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4135

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

Continue as follows to ensure that the problem is resolved:

Switch off the ignition with the key, wait at least 90 seconds and then turn it on again with the key for 30 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4143

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure did not increase sufficiently after starting the reagent pump at full capacity.

The reasons:

Possible causes of a malfunction can be the following:

Reagent hoses are leaking or plugged.

The main unit received irreparable damage due to flooding of diesel fuel into the reagent tank.

The heating system in the tank does not work in cold weather.

Ventilation tank is not working.

Tank pre-filter or main filter blocked.

The reagent dosing unit does not close completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

A malfunction causes a reagent injection shut-off.

The fault affects the emission of nitrogen oxides (NO_x) by the car. On the instrument cluster a warning lamp lights up which warns of a too high level of harmful emissions. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check if there is a reagent in the tank.

Check if there is diesel in the tank. If there is diesel in the tank, clean the tank and replace the main unit.

Check for diesel in the pump. If diesel is present in the pump, the pump, gaskets, filter, and vent valve must be replaced.

Make sure the tank ventilation is working.

Make sure that the reagent lines are not leaking and not blocked.

Check if the prefilter or main filter is clogged.

Check for signal from reagent pressure sensor.

Check if the reagent tank is working.

Ensure that the reagent dispenser can close completely.

For one minute, bring the pressure in the tank to 0.5 bar. Use hose kit 99628.

Check for double urea leaks in the reagent intake unit hose.

Check that the hose clamp is installed correctly. Tighten the clamp or install a new hose clamp.

The fault code EMS 4143 may also be due to the fact that due to the presence of diesel fuel, the valve plate expands in the pump. Due to the deformation of the valve plate, pressure build-up in the pump is not possible.

Check for diesel in the filter.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

There should not be any active trouble codes for the following cases:

main unit malfunction

air pressure in the SCR system

temperature sensor after the catalytic converter

reagent pressure sensor

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors because the exhaust gas temperature becomes very high and there is a risk that the exhaust system will melt. It takes about 5-30 minutes to complete the test.

Alternatively, you can perform the following actions so that the control unit recognizes the failure to be invalid:

Verify that the SCR system is running four times in sequence. Switch off the ignition with the key at intervals of 90 seconds between cycles.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

To switch off the test lamp, you can turn off the ignition with the ignition key three times in succession with pauses between switching off for at least 10 seconds so that the engine control unit has time to restart.

EMS 4144

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit. The malfunction may also be due to the fact that the diaphragm pump is blocked or has a malfunction.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Ensure that the diaphragm pump is not clogged or damaged. If there is damage, replace the diaphragm pump.

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4144

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Reagent pump speed too low.

The reasons:

Internal fault in the main unit of the SCR system.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again. If the DTC still persists, replace the main SCR unit.

Verify troubleshooting as follows:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4145

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Reagent pump speed too high.

The reasons:

The cause may be air in the reagent suction piping or internal fault in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check for reagent leaking between reagent tank and main unit.

If there is a leak : Turn off the power with the key, wait at least 90 seconds and then turn it on again. If the DTC still persists, replace the main SCR unit.

Verify troubleshooting as follows:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4145

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

The frequency of the diaphragm pump in the main unit was above the allowable value.

The reasons:

The cause of the malfunction may be:

Air in the reagent suction piping.

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Make sure the diaphragm pump is not damaged. If there is damage, replace the diaphragm pump.

Create a pressure in the reagent tank to check for any leakage of reagent between the reagent tank and the main unit.

If there are no leaks : Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the SCR control unit; This means that the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4146

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Voltage supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

The fuel level sensor, which is currently the only sensor in this sensor group, has a short to battery.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be in the range between 397 ohms and 92 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4146

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Internal supply voltage in the main SCR unit is too high.

The reasons:

Short circuit level sensor in the tank on the + battery.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check the electrical components, electrical connectors and wiring. Sensor resistance should be between 92 ohms and 397 ohms.

Confirm by turning off the key with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4147

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Internal supply voltage in the main SCR unit is too low.

The reasons:

Short circuit of the level sensor in the tank to ground.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check the electrical components, electrical connectors and wiring. Sensor resistance should be between 92 ohms and 397 ohms.

Confirm by turning off the key with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4147

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Voltage supply

Fault:

The voltage of one of the sensors having a common power is below the set value.

The reasons:

The level sensor in the tank, which is currently the only sensor in this group, has a short to ground.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the

instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be in the range between 397 ohms and 92 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4148

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4149

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4152

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Temperature

Fault:

The temperature of the reagent inside the main unit was above the permissible value.

The reasons:

The cause of the malfunction may be:

Water heating valve stuck open.

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

High temperatures in the SCR system may cause decomposition of the reagent.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check whether the water valve is open in the open position.

If the fault lies in the main unit, the main unit should be replaced.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4152

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Reagent temperature in main unit too high.

The reasons:

This may be due to jamming in the open position of the heating valve or an internal fault in the main unit.

Notes:

As a result of the failure, the injection of the reagent is turned off and the SCR system is deactivated.

When the SCR system is turned off, fault codes 4106, 4107, and 4108 relating to data transmission for the SCR system can be generated. Start troubleshooting based on the code for the reagent temperature.

First, re-establish communication between control units so that DTC management works correctly. Do this by turning off the ignition with the key, waiting at least 90 seconds and then turning it on again.

High temperatures in the system may cause decomposition of the reagent.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

Elimination:

Check the coolant valve for sticking in the open position.

If the fault lies in the main unit, it should be replaced.

Confirm by turning off the key with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4157

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Implausible pressure in the SCR system compared to atmospheric pressure.

The reasons:

This may be due to a malfunction in the atmospheric pressure sensor, blockage in the return line between the main unit and the reagent tank or in the air outlet pipe from the reagent tank.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check for malfunction codes indicating a malfunction in the atmospheric pressure sensor.

Check for obstructions in the return line between the main unit and the reagent tank.

Check whether there is a blockage in the rejecting tank's air outlet piping.

If no other problems are found, replace the SCR main unit .

EMS 4157

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR pressure

Fault:

The pressure in the SCR system is implausible compared to atmospheric pressure.

The reasons:

The fault may be due to different reasons:

Atmospheric pressure sensor defective.

A blockage in the return hose between the main unit and the reagent tank or in the reagent tank drain hose.

Malfunction of the main unit.

Malfunction of the pressure sensor in the main unit.

Faulty ventilation valve.

Diaphragm pump damaged by diesel fuel.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check whether the coordinator has fault codes that indicate a malfunction in the atmospheric pressure sensor.

Make sure that there is no blockage in the return pipe between the main unit and the reagent tank.

Check whether there is a blockage in the rejectant air outlet pipe.

Check the wiring.

If everything else is in order, as a last resort, replace the main unit.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The conditions under which the control unit checks:

There should be no other DTCs related to faults in the main unit.

The SCR system should have completely shut down the system. It takes approximately 90 seconds to turn off the SCR system after the ignition key is turned off.

The control unit must perform the test in four consecutive cycles. Start the engine and let it run at idle for at least 3 minutes. Then turn off and turn on the power four times, at intervals of at least 90 seconds.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4160

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure at system start was above the allowable value.

The reasons:

The return line to the tank may be plugged. There may be blockage inside or outside the main unit.

The reagent tank vent valve may be blocked.

The vent gasket has expanded due to the presence of diesel in the urea.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for the presence of diesel in the pre-filter on the reagent tank. If diesel fuel is present in the filter, thoroughly flush the main unit and replace the diaphragm pump, gaskets, and vent valve. See the instructions in the Multi system.

Check that the reagent tank vent valve is not clogged. If there is an obstruction, replace the vent valve.

Check that the return hose to the tank is blocked.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors because the exhaust gas temperature becomes very high and there is a risk that the exhaust system will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Alternatively, you can perform the following actions so that the control unit recognizes the failure to be invalid: There should be no active DTCs for air pressure in the SCR system, for faults in the main unit, for blocking the injection device, or for a temperature sensor downstream of the catalytic converter.

Start the engine and verify that the engine speed is above 1,000 rpm and that the SCR system starts up four times in a row at 90-second intervals between cycles. If the temperature is below -8 ° C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is still present, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4160

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

The reagent return line pressure is too high at system startup.

The reasons:

There may be blockage in the return line to the reagent tank, in the valve of the reagent tank or in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check for blockage in the return line to the reagent tank or in the reagent tank valve. If the fault lies in the main unit, it should be replaced.

Perform SCR system checks in SDP3.

In order to ensure that the malfunction has been rectified, in SDP3, recognize the invalidity of the malfunction codes of the NO_x control system. This operation should be carried out outdoors, because the exhaust gas temperature becomes very high, as a result of which the exhaust gas hose can be damaged.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4163

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Temperature

Fault:

The temperature sensor in the main unit indicates that the reagent temperature is below acceptable.

The reasons:

Internal malfunction in the control unit.

Notes:

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical wires to the temperature sensor.

Check whether the water valve of the heating system is stuck in the closed position.

If the fault lies in the main unit, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Reagent temperature in the tank should be above -8°C .

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4164

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent tank temperature

Fault:

The temperature in the tank is below acceptable.

The reasons:

Malfunction in the tank temperature sensor or tank heating system.

The water valve for the heating system can open in the open position.

Notes:

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the temperature sensor in the tank and wiring.

Check whether the water valve of the heating system is stuck in the closed position.

Continue as follows to ensure that the problem is resolved:

The temperature of the reagent in the tank should be above -8°C .

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4165

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Compressed air supply for SCR system

Fault:

The compressed air supply for the SCR system is not sufficient to run the SCR system.

The reasons:

The air pressure in the vehicle's compressed air supply system may be too low due to high air flow or leakage outside the SCR system.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for malfunction codes in the air supply system (APS) and troubleshoot them.

If fault codes that indicate a low pressure in the air supply system are detected in APS, and fault code 8247 was not generated, it is likely that the fault code is due to a temporary problem related to the air pressure on the vehicle.

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the DTC remains inactive, delete the DTC.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4165

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust Gas Emission System (EEC)

Fault:

Insufficient supply of compressed air to start the EEC system.

The reasons:

The air pressure in the car's compressed air supply system may be too low due to high air flow or leakage.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check for malfunction codes in the compressed air system (APS) and troubleshoot them.

If there are fault codes indicating low pressure in the compressed air circuit, but fault code 8247 has not been generated, there may be a temporary problem with the air pressure.

Confirm by turning off the key with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 4166

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

The difference in air pressure before and after constriction during dosing is less than expected

The reasons:

The injection device or air hose is plugged.

Notes:

The SCR system does not inject the additive, resulting in increased exhaust emissions.

Elimination:

Ensure that the nozzle nozzle and the air hose are not blocked between the SCR control unit and the nozzle nozzle.

EMS 4167

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR Voltage

Fault:

The SCR control unit detects that the battery voltage is lower than the value measured by the engine control unit.

The reasons:

Electrical wiring or main unit connectors are damaged.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the wiring and electrical connectors of the main unit.

Continue as follows to ensure that the problem is resolved:

Start the engine and then shut it down again.

Turn on the onboard power with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4167

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust Gas Emission System (EEC)

Fault:

The measured voltage in the control unit of the exhaust emission lowering system is lower than the voltage in the engine control unit.

The reasons:

Damaged wiring or connectors.

Notes:

No description

Elimination:

Check the wiring and connectors of the exhaust system.

For engines with a NOx control system:

Start the engine.

Turn off the engine.

Turn on the ignition.

If the fault is resolved, the fault code becomes inactive.

EMS 4168

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Nitrogen oxide (NOx) release

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

High level of exhaust toxicity. There is a risk of exceeding the prescribed limit of NOx emissions. Torque reduction is not activated.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be caused by the following:

NOx emission level too high.

Low quality reagent.

Reagent injection nozzle malfunction.

Catalytic Closure.

NOx sensor transmits incorrect value.

Malfunction in dosing module.

Malfunction in the main unit.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction

code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for any other trouble codes related to exhaust emissions.

Make sure that the reagent tank contains an AdBlue reagent.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can perform the following actions so that the control unit recognizes the failure as invalid:

Perform a road test with a heavy load on it.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4169

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Nitrogen oxide (NOx) release

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

Excessively high exhaust emissions. In the car, the prescribed limit of NOx emissions is exceeded. Torque reduction activated.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be caused by the following:

NOx emission level too high.

Low quality reagent.

Reagent injection nozzle malfunction.

Catalytic Closure.

The catalytic converter may be damaged by oil transferred from the turbocharger.

NOx sensor transmits incorrect value.

Malfunction in dosing module.

Malfunction in the main unit.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also

displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the SCR system in the following sequence:

Check for any other active DTCs related to exhaust emissions.

Make sure that the quality of the reagent in the appropriate tank meets the applicable standards.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

Ensure that the catalytic converter substrate is intact.

Check for faults in the turbocharger. Contact with oil can lead to irreparable damage to the catalytic converter.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. It takes about 5-30 minutes to complete the test.

Otherwise, you can perform the following actions so that the control unit recognizes the failure as invalid:

Perform a road test with a heavy load on it.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4169

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

The measured content of nitric oxide (NOx) after the catalytic converter is higher than the allowable one.

The reasons:

This may be due to a malfunctioning catalytic converter or NOx sensor or problems with reagent injection.

Notes:

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NOx control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check for additional trouble codes that adversely affect the level of harmful emissions.

Make sure that the AdBlue reagent is the correct brand in the tank.

Make sure that the reagent lines or injection nozzles are not blocked.

Do not damage the catalytic converter.

The crystals at the inlet of the catalytic converter can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensors. Do not confuse sensors before and after the catalytic converter.

In order to ensure that the malfunction has been rectified, in SDP3, recognize the invalidity of the malfunction codes of the NOx control system. This operation should be carried out outdoors, because the exhaust gas temperature becomes very high, as a result of which the exhaust gas hose can be damaged.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4170

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Nitrogen oxides (NOx) after catalytic converter

Fault:

The measured amount of nitrogen oxides is different from what should be.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be due to a malfunctioning catalytic converter, a malfunctioning NOx sensor, or a malfunctioning reagent dosing system.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for any other trouble codes related to exhaust emissions.

Make sure that the reagent tank contains an AdBlue reagent.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

Continue as follows to ensure that the problem is resolved:

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The control unit must perform the test in four consecutive cycles. It is necessary to perform a road test of a vehicle with a large load – four times in succession with an intermediate engine shutdown.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 4171

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Nitrogen oxides (NOx) after catalytic converter

Fault:

The measured amount of nitrogen oxides is different from what should be.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be due to a malfunctioning catalytic converter, a malfunctioning NOx sensor, or a malfunctioning reagent dosing system.

The calculated NOx is different from the measured NOx. The reason for this may be an excessively high or variable amount of NOx from the engine or an incorrect value from the NOx sensor.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants.

Elimination:

Check for any other trouble codes related to exhaust emissions.

Make sure that the reagent tank contains an AdBlue reagent.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

After correcting, erase the fault code and select the “Migrate NOx data” option under the “Adjustment” tab in the EMS S6. To verify that the malfunction has been rectified, perform the “Recognizing the DTCs for NOx Verification” check, which is located under the “Checks” tab in the EMS S6. This test can be used even on a vehicle that is not equipped with a NOx control function.

EMS 4172

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx sensor after catalytic converter

Fault:

The measured amount of nitrogen oxides is different from what should be.

The reasons:

There is a malfunction in the NOx sensor after the catalytic converter.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace the NOx sensor.

Continue as follows to ensure that the problem is resolved:

To verify that the malfunction has been rectified, perform the “Recognizing DTCs for NOx Control Invalidations” check, which is located on the “Checks” tab in SDP3. The test takes approximately 30 minutes and should be performed outdoors.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 4173

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

An improbably high exhaust gas temperature in front of the catalytic converter.

The reasons:

Sensor malfunction. In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

Too much reagent may be injected.

The reagent can be injected into a cold catalytic converter.

Elimination:

Check sensor, wiring and connectors.

EMS 4174

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

Implausibly low exhaust gas temperature in front of the catalytic converter.

The reasons:

Sensor malfunction. In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

Not enough injected reagent. Leads to increased emissions of nitric oxide (NO_x).

Elimination:

Check sensor, wiring and connectors.

On engines with an NO_x control system, repair must be confirmed by the control unit:

Verify that the temperature sensor is showing the correct value.

Using SDP3, invalidate the DTCs for the NO_x control system.

Or

Four times in a row for 12 minutes, let the engine run at a speed of 1000 rpm and an exhaust gas temperature above 200 ° C with the ignition off between the segments.

If the fault is resolved, the fault code becomes inactive.

EMS 4175

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

Implausible signal from the exhaust temperature sensor in front of the catalytic converter.

The reasons:

Temperature sensor defective.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

Too little reagent is injected or reagent is not injected.

Elimination:

Check sensor signal.

Check sensor, wiring and connectors.

On engines with an NOx control system, repair must be confirmed by the control unit:

Verify that the temperature sensor is showing the correct value.

Using SDP3, invalidate the DTCs for the NOx control system. Or

Four times in a row for 12 minutes, let the engine run at a speed of 1000 rpm and an exhaust gas temperature above 200 ° C with the ignition off between the segments.

If the fault is resolved, the fault code becomes inactive.

EMS 4175

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The temperature is lower than expected by the control unit.

The reasons:

Defective exhaust gas temperature sensor in front of the SCR catalytic converter.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Check exhaust system.

Use the following options to ensure that the problem is resolved:

To verify that the malfunction has been rectified, perform the “Recognizing DTCs for NOx Control Invalidations” check, which is located on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, follow these steps to make the control unit invalidate the fault.

Start the engine and verify that the engine speed is above 1000 rpm and that the SCR system starts. Repeat this four times in a row. If the temperature is below -8°C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4177

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Nitrogen oxide (NOx) release

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

The reasons:

The SCR system does not reduce the level of nitrogen oxides properly.

The calculated NOx is different from the measured NOx. The reason for this may be an excessively high or variable amount of NOx from the engine or an incorrect value from the NOx sensor.

This may be caused by the following:

NOx emissions are too high.

Low quality reagent.

Reagent injection nozzle malfunction.

Catalytic Closure.

The catalytic converter may be damaged by oil transferred from the turbocharger.

NOx sensor transmits incorrect value.

Malfunction in dosing module.

Malfunction in the main unit.

Notes:

No description

Elimination:

Check the SCR system in the following sequence:

Check for any other active DTCs related to exhaust emissions.

Make sure that the quality of the reagent in the appropriate tank meets the applicable standards.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check that the catalytic converter is intact.

Ensure that the catalytic converter substrate is intact.

Check for faults in the turbocharger. Contact with oil can lead to irreparable damage to the catalytic converter.

You can use the following options to make sure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. The test takes approximately 30 minutes and should be performed outdoors.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid. Perform a road test with a heavy load on it.

For vehicles with NOx control

To verify troubleshooting:

Perform the “Recognize NOx Control DTCs” test or perform a road test as described above.

If the fault is resolved, the fault code becomes inactive.

EMS 4178

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The temperature is lower than expected by the control unit.

The reasons:

Defective exhaust gas temperature sensor in front of the SCR catalytic converter.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

A malfunction leads to a lack of reagent supply or the addition of a very small amount of reagent.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the

instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check exhaust gas temperature sensor and wiring.

Check exhaust system.

Use the following options to ensure that the problem is resolved:

To verify that the malfunction has been rectified, perform the “Recognizing DTCs for NOx Control Invalidations” check, which is located on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt.

Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, follow these steps to make the control unit invalidate the fault.

Start the engine and verify that the engine speed is above 1000 rpm and that the SCR system starts. Repeat this four times in a row. If the temperature is below -8 ° C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive and can be erased.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4180

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature

Fault:

The temperature of the reagent in the tank was above the permissible value.

The reasons:

There may be a malfunction in the temperature sensor in the tank or the water valve of the heating system stuck in the open position.

This DTC can also be generated if it is very warm outside.

Notes:

As a result of a fault, the injection of the reagent is turned off.

High temperatures may cause decomposition of the reagent.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the temperature sensor in the tank.

Check whether the water valve is open in the open position.

Continue as follows to ensure that the problem is resolved:

The temperature of the reagent in the tank should be below 59 ° C.

Switch off the ignition with the key, wait at least 90 seconds and switch on the ignition again.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 4180

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

Reagent tank temperature too high.

The reasons:

There may be a malfunction in the temperature sensor in the tank. The reagent warm-up valve may be stuck open. This DTC can also be generated if it is very warm outside.

Notes:

Reagent injection is deactivated.

High temperatures may cause decomposition of the reagent.

Malfunction adversely affects engine emissions of nitric oxide. The control lamp is on.

On engines with a NO_x control system, torque is reduced by 40%. The fault code cannot be cleared while the fault is present. When the malfunction is resolved, the control unit must verify this in order for the fault code to become inactive.

Elimination:

Check the temperature sensor in the tank.

Check the coolant valve for sticking in the open position.

To verify that the malfunction has been resolved, first verify that the temperature in the tank is below 59 ° C. Confirm by turning off the key with the key, wait 90 seconds and then turn it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the ignition three times at intervals of 10 seconds to deactivate the test lamp.

EMS 4192

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator

Fault:

One or more faults in the generator.

The reasons:

No description

Notes:

No description

Elimination:

Check generator, electrical connectors and wiring. If other trouble codes are generated, first troubleshoot them.

EMS 4193

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Break in the generator circuit.

Notes:

In order for a malfunction code to be generated, the generator must be activated (generate charging current). As long as this DTC remains active, it is impossible to activate the generator.

Elimination:

Check the generator, as well as electrical connectors and wiring.

EMS 4194

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

A short to ground in the electrical circuit of the generator.

Notes:

In order for a malfunction code to be generated, the generator must be activated (generate charging current). As long as this DTC remains active, it is impossible to activate the generator.

Elimination:

Check the generator, as well as electrical connectors and wiring.

EMS 4195

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Short to battery + in the generator circuit.

Notes:

As long as this DTC remains active, it is not possible to control the charge current of the generator.

A malfunction may cause spontaneous activation of the generator.

Elimination:

Check the generator, as well as electrical connectors and wiring.

EMS 4196

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Atmospheric pressure sensor

Fault:

The atmospheric pressure sensor indicates a value that is too high compared to the value of the charge air pressure sensor and the exhaust pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4197

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Atmospheric pressure sensor

Fault:

The atmospheric pressure sensor indicates a value that is too low compared to the value of the charge air pressure sensor and the exhaust pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4198

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air pressure sensor

Fault:

The charge air pressure sensor indicates a value that is too high compared to the value of the atmospheric pressure sensor and the exhaust pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust

pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4199

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air pressure sensor

Fault:

The charge air pressure sensor indicates a value that is too low compared to the value of the atmospheric pressure sensor and the exhaust pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4200

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust pressure sensor

Fault:

The pressure sensor in the exhaust system shows a value that is too high compared to the value of the atmospheric pressure sensor and the charge air pressure sensor.

The reasons:

Sensor defective or blocked by dirt.
Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4201

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The charge air pressure sensor indicates a value higher than the value of the atmospheric pressure sensor.

The reasons:

Sensor defective or blocked by dirt.
Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm,

turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4202

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust pressure sensor

Fault:

The pressure sensor in the exhaust system shows a value that is too low compared with the value of the atmospheric pressure sensor and the charge air pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

Engine power may be reduced.

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4203

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The pressure sensor in the exhaust system shows a value higher than the value of the charge air pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4204

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The atmospheric pressure sensor indicates a value higher than the value of the pressure sensor in the exhaust system.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4205

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pressure meter

Fault:

The pressure sensor in the exhaust system shows a value higher than the value of the atmospheric pressure sensor.

The reasons:

Sensor defective or blocked by dirt.

Fault in the wiring harness or connectors.

Notes:

No description

Elimination:

Compare the values ??from all three pressure sensors: atmospheric pressure, charge air pressure and exhaust pressure.

Make sure the engine is off, but the power is on. All three sensors should indicate the pressure corresponding to the current atmospheric pressure.

Check wiring harness and sensor connectors.

Replace the sensor or sensors deviating from the actual pressure.

To acknowledge the validity of the DTC after the action has been completed, make sure that the engine is warm, turn on the power with the ignition key, wait 30 seconds and then start the engine. The invalidation of the fault code must be executed immediately.

EMS 4208

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outdoor temperature sensor

Fault:

Outdoor sensor malfunction.

The reasons:

Malfunction in connectors, electrical wiring or outdoor temperature sensor.

Notes:

No description

Elimination:

Check the outside temperature sensor, electrical connectors and wiring.

Read the fault codes in the ICL system and follow the instructions here.

EMS 4208

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Outside temperature sensor

Fault:

Outdoor sensor malfunction.

The reasons:

Malfunction in connectors, electrical wiring or outdoor temperature sensor.

Notes:

Engine torque is reduced in vehicles with a NOx monitoring system after this DTC remains active for 36 hours.

Elimination:

Check outdoor temperature sensors, electrical connectors and wiring.

EMS 4209

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Outdoor temperature sensor on the bus

Fault:

The difference in readings between the two outdoor temperature sensors on the bus is too great. The difference should not exceed 15 ° C.

The reasons:

Possible causes: outdoor temperature sensors are dirty or faulty.

Notes:

In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

Elimination:

Check outdoor temperature sensors. Check sensor readings using SDP3. Replace sensors if necessary.

EMS 4209

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Outdoor temperature

Fault:

The outdoor temperature sensor signal from the coordinator is invalid. The value is below acceptable.

The reasons:

An outdoor temperature sensor connected to the coordinator gives a lower reading than the outdoor temperature sensor connected to the BCS control unit.

Notes:

No description

Elimination:

Check for signals from outside temperature sensors. The difference between the measured temperature should be less than 10 degrees.

Cars with NOx control

This DTC will reduce torque on vehicles with control over NOx emissions.

Turn on the ignition with a key to verify that the problem has been corrected.

If the fault is resolved, the fault code becomes inactive after approximately 5 seconds.

EMS 4210

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Outdoor temperature

Fault:

An incorrect signal from the outside temperature sensor, which is connected to the BCS control unit, was received via CAN bus.

The reasons:

The data received from the BCS control unit via CAN bus indicates that the outside temperature sensor is faulty.

Notes:

No description

Elimination:

Check outdoor temperature sensors, electrical connectors and wiring.

If this DTC is active, first check for DTCs in the BCS control unit.

Cars with NOx control system

This DTC will reduce torque on vehicles with control over NOx emissions.

Turn on the ignition with a key to verify that the problem has been corrected.

If the fault is resolved, the fault code becomes inactive.

EMS 4210

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

The difference in readings between the two outdoor temperature sensors is too great.

The reasons:

This may be due to contamination of the outdoor temperature sensors or exposure to external heat sources.

Notes:

No description

Elimination:

Check outdoor temperature sensors. Check sensor readings using SDP3. Replace sensors if necessary.

EMS 4211

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

AAT2 transmits the wrong temperature signal to the instrument panel.

The reasons:

Malfunction in circuit between sensor and ICL.

Notes:

No description

Elimination:

Check the temperature sensor, connectors and wiring. Read the fault codes in the ICL system and follow the instructions here.

EMS 4212

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

The difference in readings between the two outdoor temperature sensors is too great.

The reasons:

This may be due to contamination of the outdoor temperature sensors or exposure to external heat sources. One or both sensors are defective.

Notes:

No description

Elimination:

Check outdoor temperature sensors. Check sensor readings using SDP3. Replace sensors if necessary.

EMS 4213

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

AAT2 sends the wrong temperature signal to the BCS.

The reasons:

Malfunction in the circuit between the sensor and the BCS.

Notes:

No description

Elimination:

Check the temperature sensor, connectors and wiring. Read the fault codes in the BCS and follow the instructions here.

EMS 4214

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

The difference in readings between the two outdoor temperature sensors on the bus is too great.

The reasons:

This may be due to contamination of the outdoor temperature sensors or exposure to external heat sources. One or both sensors are defective.

Notes:

No description

Elimination:

Check outdoor temperature sensors. Check sensor readings using SDP3. Replace sensors if necessary.

EMS 4215

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Outside temperature sensor

Fault:

The outdoor temperature sensor did not change the temperature for a long time, sufficient to change the temperature.

The reasons:

The outside temperature sensor is frozen or intervened.

Notes:

No description

Elimination:

Check the outside temperature sensor, wiring and electrical connectors.

EMS 4224

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fuel pressure

Fault:

During the diagnostic test, the safety valve opens at an unexpectedly low pressure.

The reasons:

Faulty fuel pressure sensor or safety valve.

Notes:

No description

Elimination:

Check the fuel pressure sensor.

Check the safety valve.

EMS 4240

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fuel pressure

Fault:

When the fuel pressure rises, the actual value is below the adjustable value.

The reasons:

A possible cause of a malfunction is a worn or faulty high-pressure fuel pump.

Notes:

Possible degradation of the engine.

Elimination:

Check the high pressure pump.

EMS 4241

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The end positions of the throttle position sensor are outside the acceptable range.

The reasons:

Excessive stress when checking end positions.

Notes:

The throttle valve is not controlled, it remains open.

Elimination:

Check the supply voltage of the position sensor and the throttle actuator. Check throttle function.

EMS 4351

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Crankshaft speed signals

Fault:

No signals from both crankshaft speed sensors.

The reasons:

A fault code can be set if the speed sensors are not connected at all, or both speed sensors are faulty.

The DTC can be set at start-up with a discharged battery.

Also, this fault may occur if the starter is not connected to the control unit, or if the output signal of the control

unit for the starter is incorrect.

Notes:

Shutting off the fuel in the absence of a signal from one of the engine speed sensors.

Elimination:

If the engine crankshaft rotates when the starter is activated, check the speed sensors, connectors and wiring.

If the engine crankshaft does not rotate when the starter is activated, check the proper performance of the latter.

EMS 4352

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Crankshaft speed signals

Fault:

When the engine is running, the signals from the two speed sensors do not match.

The reasons:

If fault code 4352 was registered and fault code 4608 is not, this may be due to the fact that the electrical wiring going to one of the engine crankshaft speed sensors is confused. The control unit cannot determine which.

If, however, both DTC 4352 and DTC 4608 were registered, this may be due to the fact that the engine took a few turns in the opposite direction.

If, when you try to start the engine, fault codes 4352 and 4608 are generated, this may be due to the fact that the engine speed sensors were interchanged.

Notes:

If DTC 4352 was registered and DTC 4608 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

EMS 4352

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel pressure in the accumulator

Fault:

The fuel pressure in the pressure accumulator exceeded the maximum permissible value.

The reasons:

Possible reasons:

Feed pressure too high.

Fuel metering inlet valve sticking or leaking.

Faulty diffuser in high pressure pump.

Notes:

At low loads, abnormally high noise generated during combustion may be present.

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

If there is any trouble code related to the fuel metering inlet valve, first replace it.

Then check the supply pressure as described in L6 of document 03: 14-01, edition 2. Continue with the Lc "troubleshooting tree" if the pressure is too high. Otherwise, replace the fuel metering inlet valve.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4352

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Charge air pressure sensor

Fault:

The charge air pressure and atmospheric pressure differ when the engine is idling.

The reasons:

Possible reasons:

Malfunction of the charge air pressure sensor or atmospheric pressure sensor.

Malfunction of coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

The fault may also be in the connectors or electrical wiring circuits.

Notes:

The charge air pressure sensor, the coolant temperature sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Make sure that the charge air pressure and the atmospheric pressure are about the same value, approximately 1 bar of absolute pressure, with the engine off or when the engine is idling.

Check the charge air pressure sensor, coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Check whether the charge air pressure sensor is covered with soot. If so, clean it.

If a fault in the charge air pressure sensor is not detected, troubleshoot the atmospheric pressure sensor using a coordinator.

EMS 4353

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Crankshaft speed signals

Fault:

The speed signal from the engine crankshaft speed sensor is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The control unit increases the sensitivity of the sensor so that a fault code is not generated. Therefore, a fault code will not be generated again even if the fault still persists. This increase in sensor sensitivity may lead to the generation of other trouble codes. These DTCs can be ignored. The automatic adjustment performed by the control unit does not in any way affect the operation of the control unit.

The fault does not affect the operation of the engine, i.e. There is no power limit.

Elimination:

If the DTC was generated greater than in the two cases, check the distance between the sensor and the flywheel (which is allowed a maximum of 1.5 mm).

EMS 4354

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

Open circuit engine speed sensor. This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If at the same time has been generated fault code 4359, it is possible that there was no signal for a few turns of the engine, otherwise the problem is a consequence of temporary interference.

If only the defective one of the sensors of the engine crankshaft speed until the fault is present the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4355

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

The signal from the engine speed sensor has strong interference.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If at the same time has been generated fault code 4359, it is possible that there was no signal for a few turns of the engine, otherwise the problem is a consequence of temporary interference.

If only the defective one of the sensors of the engine crankshaft speed until the fault is present the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4356

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

The engine speed sensor indicates a too large increase in engine speed over the period between two consecutive pulses.

The reasons:

This fault may occur when the polarity of the two speed sensors is switched on.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If at the same time has been generated fault code 4359, it is possible that there was no signal for a few turns of the engine, otherwise the problem is a consequence of temporary interference.

If only the defective one of the sensors of the engine crankshaft speed until the fault is present the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4357

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

The engine speed sensor indicates a too large decrease in engine speed over a period of time between two consecutive pulses.

The reasons:

Open circuit engine speed sensor.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If at the same time has been generated fault code 4359, it is possible that there was no signal for a few turns of the engine, otherwise the problem is a consequence of temporary interference.

If only the defective one of the sensors of the engine crankshaft speed until the fault is present the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4358

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

The signal from the crankshaft speed sensor was wrong from the start.

The reasons:

The engine speed sensor produces an incorrect signal.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If DTC 4352 was registered and DTC 4608 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4359

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 1

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

If one of the engine speed sensors is faulty, the maximum torque of the engine is reduced by 30%.

Increased engine speed at idle will also be lower than usual.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4369

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 1

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal "overflows".

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4370

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 2

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test

within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4371

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 3

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4372

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 4

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4373

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 5

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4374

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Cylinder balance cylinder 6

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4375

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 7

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4376

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 8

Fault:

The lowest value has been reached to which the control unit can adjust the amount of fuel for the cylinder

The reasons:

The power generated by the cylinder, more than in other cylinders.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

On HPI engines, this DTC can be generated if not all the fuel intended for it is injected into the cylinder. Then the next cylinder in this ignition sequence in the same row of cylinders will receive too much fuel, which the control unit is trying to reduce.

Notes:

As a result, the engine runs unevenly. If the cylinder receives too much fuel, it can lead to black smoke.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. This means that the engine must be started and must idle for 15 minutes four times in a row. To see if the DTC is in the process of reviewing, that is, if a DTC is generated before it becomes active, you can use the DTC monitoring feature.

EMS 4385

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 1

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 4386

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 2

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 4387

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 3

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 4388

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 4

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is being generated, you can use the DTC Monitoring feature.

EMS 4389

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 5

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is being generated, you can use the DTC Monitoring feature.

EMS 4390

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 6

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is being generated, you can use the DTC Monitoring feature.

EMS 4391

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 7

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated

immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 4392

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Balancing Cylinders, Cylinder 8

Fault:

The maximum cycle feed rate has been reached for this engine cylinder, which is authorized by the control unit.

The reasons:

The average effective pressure in one of the engine cylinders is lower than in the others.

The reasons may be as follows:

The presence of air in the fuel injection system, which may be caused by a low level of fuel in the tank or air leakage before the boost pump. If the reason lies in this, then a similar fault code can be written for several cylinders.

External leak nozzles or internal “overflows”.

HPI: A malfunction in the injector supply line or a malfunction of the injection timing control solenoid valve.

PDE: Faulty solenoid pump injector valve.

Insufficient compression in the cylinder.

Notes:

As a result, the engine runs unevenly.

If the cyclic feed to a cylinder is too low, white smoke may occur.

Elimination:

Remove air from the fuel system.

Verify that there are no leaks in the supply line.

If malfunctions occur again:

Check the pump injectors.

HPI: Check the fuel solenoid and injection advance solenoid valves.

PDE: Check the solenoid valve on the injector pump problem.

Check the compression in the engine cylinder by performing a compression test.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the control unit must complete the test within 4×15 minutes with negative results. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 4400

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Coolant temperature

Fault:

The signal from the coolant temperature sensor is unreliable with respect to current operating conditions. The value is lower than expected.

The reasons:

Possible reasons:

Defective coolant temperature sensor or other element in the cooling system.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Malfunction affects vehicle emissions of nitrogen oxides (NO_x); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NO_x control system also display a text message.

Cars with NO_x control system

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Check thermostat.

Check the fan.

Check the valve in the expansion tank cap.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The conditions under which the control unit checks:

Coolant temperature above 60 ° C.

The control unit must perform the test in four consecutive cycles. This means that the power must be turned off and on four times using the ignition key at 10-second intervals.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 4400

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor

Fault:

The displayed coolant temperature is lower than expected or the temperature in a variable geometry turbocharger is higher than expected.

The reasons:

The coolant temperature sensor, variable geometry turbocharger temperature sensor, or any other cooling system component is faulty or damaged.

Notes:

Reduced engine power. DTC cannot be deleted on vehicles with NOx control system.

The fault code cannot be cleared while the fault is present.

Elimination:

Perform troubleshooting in the following order:

Does the coolant temperature sensor indicate a valid value?

Coolant temperature sensor, its electrical connectors and wiring.

No blockage or leakage in the coolant circuit of a variable geometry turbocharger.

Does the temperature sensor of a variable geometry turbocharger indicate a valid value

Variable geometry turbocharger temperature sensor, its electrical connectors and electrical wiring.

Fan.

Thermostat.

Check valve next to the expansion tank.

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

If the fault is resolved, after checking the fault code becomes inactive and can be erased.

The fault code can also be made inactive by warming up the engine to normal coolant temperature and then performing a trip at a speed above 30 km / h for at least 15 minutes.

EMS 4401

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant temperature sensor

Fault:

The displayed coolant temperature is higher than expected or the temperature in a variable geometry turbocharger is lower than expected.

The reasons:

The T33 coolant temperature sensor or the temperature sensor located in the M30 engine of a variable geometry turbocharger is defective or damaged. A fault code can also be generated if another element of the cooling system is faulty or damaged.

Notes:

Reduced engine power. DTC cannot be deleted on vehicles with NOx control system.

Elimination:

Check:

the reliability of the value of the coolant temperature sensor T33 using SDP3

coolant temperature sensor T33, thermostat and fan

no blockage or leakage in the coolant circuit of a variable geometry turbocharger

check valve next to the expansion tank

the location of the temperature sensor of the turbocharger with variable geometry in the electric motor M30, it can not be done using SDP3

Check the connectors and wiring of the item

After generating this DTC, always check the EGR system for invalidating DTCs. This check can be performed using SDP3.

If the fault is resolved, after checking the fault code becomes inactive and can be erased.

The fault code can also be made inactive by warming up the engine to normal coolant temperature and then performing a trip at a speed above 30 km / h for at least 15 minutes.

EMS 4402

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant temperature

Fault:

Coolant temperature exceeds the limit value.

The reasons:

Defective coolant pump or coolant temperature sensor.

Notes:

Engine power is reduced and the yellow engine warning light comes on.

Elimination:

Check the coolant pump and coolant temperature sensor with electrical wiring and electrical connectors.

EMS 4403

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant temperature

Fault:

Coolant temperature exceeds maximum value.

The reasons:

Defective coolant pump or coolant temperature sensor.

Notes:

Engine power is reduced and the yellow engine warning light comes on.

Elimination:

Check the coolant pump and coolant temperature sensor with electrical wiring and electrical connectors.

EMS 4416

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Atmosphere pressure

Fault:

The charge air pressure shown on the display is implausible compared to atmospheric pressure.

The reasons:

Atmospheric pressure and charge air pressure differ when the engine is off, but the ignition is on.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Compare the values ??from the charge air pressure sensor and the atmospheric pressure sensor with the engine off but the ignition on. Sensors should display approximately the same value, an absolute pressure of approximately 1 bar.

Continue as follows to ensure that the problem is resolved:

There may be no electrical codes for the atmospheric pressure sensor or for the charge air pressure sensor.

The battery voltage is higher than 15 V.

Ignition is on, but the engine is off.

Cars with NOx control

To verify troubleshooting:

Switch off the ignition with the key, wait for 60 seconds and then turn it on again for 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 4417

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Atmosphere pressure

Fault:

The charge air pressure shown on the display is implausible compared to atmospheric pressure.

The reasons:

Atmospheric pressure and charge air pressure differ when the engine is off, but the ignition is on.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Compare the values ??from the charge air pressure sensor and the atmospheric pressure sensor with the engine off but the ignition on. Sensors should display approximately the same value, an absolute pressure of approximately 1 bar.

Continue as follows to ensure that the problem is resolved:

There may be no electrical codes for the atmospheric pressure sensor or for the charge air pressure sensor.

The battery voltage is higher than 15 V.

Ignition is on, but the engine is off.

Cars with NOx control

This DTC will reduce torque on vehicles with control over NOx emissions.

To verify troubleshooting:

Switch off the ignition with the key, wait for 60 seconds and then turn it on again for 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 4624

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4627 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4625

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4627 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover

and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4626

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4627

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4628

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4629

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4630

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 1

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4432

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 1

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A fault in the electrical wiring or in the solenoid valve of the cylinder 1 injector. If the injector wiring is faulty, this can affect all of the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

The pressure in the fuel system reaches a very high value, up to 3000 bar.

Before starting any work, release pressure in the fuel system. When handling the system, it should be assumed that it is under pressure, even if the engine is off.

Wear protective gloves and goggles.

Additional information about the rules of safe handling of the fuel system is given in the service instructions, section "Fuel System XPI".

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive wire of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4433

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 2

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A fault in the electrical wiring or in the solenoid valve of the cylinder 2 injector. If the injector wiring is faulty, this can affect all of the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4434

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 3

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A fault in the electrical wiring or in the solenoid valve of the cylinder 3. If the injector wiring is faulty, this can affect all of the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4435

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 4

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A malfunction in the electrical wiring or in the solenoid valve of the cylinder 4. If the electrical wiring of the injector is faulty, this can affect all the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4436

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 5

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A malfunction in the electrical wiring or in the solenoid valve of the nozzle of the cylinder 5. If the electrical wiring of the nozzle is faulty, this can affect all the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4437

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 6

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A malfunction in the electrical wiring or in the solenoid valve of the cylinder 6. If the electrical wiring of the injector is faulty, this can affect all the injectors in this row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4438

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 7

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A fault in the electrical wiring or in the solenoid valve of the nozzle cylinder 7. If the injector wiring is faulty, it can affect all the nozzles in the row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4439

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Nozzle, cylinder 8

Fault:

Permanent electrical fault in the injector solenoid valve or in the injector wiring.

The reasons:

A fault in the electrical wiring or in the solenoid valve of the nozzle cylinder 8. If the injector wiring is faulty, it can affect all the nozzles in the row of cylinders.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An

infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4442

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group A

Fault:

Permanent electrical failure in the solenoid valve (s) of one or more nozzles or in the injector wiring.

The reasons:

A fault in the solenoid valve (s) of one or more nozzles or in the wiring of the injectors. If the injector wiring is faulty, it can affect all of the injectors in the cylinder bank.

Notes:

Cylinders A on a 5-cylinder engine include cylinders 2 and 5, on a 6-cylinder engine – 4, 5 and 6, on an 8-cylinder engine – 2, 3, 5 and 8. A fault appears only with the engine running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the power wire and the ground wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4443

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group A

Fault:

Permanent electrical failure in the solenoid valve (s) of one or more nozzles or in the injector wiring.

The reasons:

A fault in the solenoid valve (s) of one or more nozzles or in the wiring of the injectors. A possible cause of a malfunction is a short circuit to ground in the wiring of the injectors.

Notes:

Cylinders A on a 5-cylinder engine include cylinders 2 and 5, on a 6-cylinder engine – 4, 5 and 6, on an 8-cylinder engine – 2, 3, 5 and 8. A fault appears only with the engine running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the power wire and the ground wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4444

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group A

Fault:

Permanent electrical failure in the solenoid valve (s) of one or more nozzles or in the injector wiring.

The reasons:

A fault in the solenoid valve (s) of one or more nozzles or in the wiring of the injectors. A possible cause of the malfunction is a short circuit to the + battery in the injector wiring.

Notes:

Cylinders A on a 5-cylinder engine include cylinders 2 and 5, on a 6-cylinder engine – 4, 5 and 6, on an 8-cylinder engine – 2, 3, 5 and 8. A fault appears only with the engine running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the positive wire and the negative wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value or a very high resistance must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4445

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group A

Fault:

Permanent electrical fault between cylinder group A and another group.

The reasons:

Faulty injector or injector electrical wires. Perhaps the fault is a short circuit in the wiring between groups of cylinders.

Notes:

Cylinders A on a 5-cylinder engine include cylinders 2 and 5, on a 6-cylinder engine – 4, 5 and 6, on an 8-cylinder engine – 2, 3, 5 and 8. A fault appears only with the engine running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Check nozzles, wiring and pin connections.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4447

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Malfunction in electrical wiring or nozzle of cylinder 1. A possible malfunction is a short circuit in one or more solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4449

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

There is a fault in the electrical wiring or in the nozzle of cylinder number 2. The malfunction may be due to a short circuit in one or more of the solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit continuously attempts to use the nozzles, regardless of the fault.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections in the control unit and the wiring gasket in the cylinder head.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4452

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Fault in the electrical wiring or in the nozzle of the cylinder number 3. Perhaps the fault is a short circuit in one or more of the solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit continuously attempts to use the nozzles, regardless of the fault.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections in the control unit and the wiring gasket in the cylinder head.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a

danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4455

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

There is a fault in the electrical wiring or in the nozzle of cylinder number 4. The fault may be a short circuit in one or more of the solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit continuously attempts to use the nozzles, regardless of the fault.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections in the control unit and the wiring gasket in the cylinder head.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value (8 ohms) must be obtained.

Because of the danger of condensation in an air-cooled EGR cooler after the EGR system is turned off, the EGR cooler should be emptied if the operating time is much longer than 10 hours after the malfunction code has been generated. Drain the condensate following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4458

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Injector malfunction, cylinder group B

Fault:

Permanent electrical failure of one or more nozzle solenoid valves or nozzle electrical wires.

The reasons:

A fault in the solenoid valve (s) of one or more nozzles or in the wiring of the injectors. If the injector wiring is faulty, it can affect all of the injectors in the cylinder bank.

Notes:

The control unit continuously attempts to use the nozzles, regardless of the fault.

Cylinders B on a 5-cylinder engine include cylinders 1, 3 and 4, on a 6-cylinder engine – 1, 2 and 3, on an 8-cylinder engine – 1, 4, 6 and 7. A fault occurs only when the engine is running.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections in the control unit and the wiring gasket in the cylinder head.

Measure the resistance between the power wire and the ground wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4459

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group B

Fault:

Permanent electrical failure of one or more nozzle solenoid valves or nozzle electrical wires.

The reasons:

A fault in the solenoid valve (s) of one or more nozzles or in the wiring of the injectors. Perhaps the fault is a short circuit to ground in the wiring of the injectors.

Notes:

Cylinders B on a 5-cylinder engine include cylinders 1, 3 and 4, on a 6-cylinder engine – 1, 2 and 3, on an 8-cylinder engine – 1, 4, 6 and 7. A fault occurs only when the engine is running. The control unit continuously attempts to use the nozzles, regardless of the fault.

Elimination:

Disconnect the electrical wiring from the control unit and the solenoid valve on the faulty injector.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections in the control unit and the wiring gasket in the cylinder head.

Measure the resistance between the power wire and the ground wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4460

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group B

Fault:

Permanent electrical failure of one or more nozzle solenoid valves or nozzle electrical wires.

The reasons:

Malfunction of one or more nozzles or nozzle electrical wires. Perhaps the fault is a short circuit on the battery voltage in the wiring nozzles.

Notes:

Cylinders B on a 5-cylinder engine include cylinders 1, 3 and 4, on a 6-cylinder engine – 1, 2 and 3, on an 8-cylinder engine – 1, 4, 6 and 7. A fault appears only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the power wire and the ground wire (disconnect them from the nozzle and from the control unit). An infinite resistance value (8 ohms) must be obtained.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value or a very high resistance must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a

danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4461

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder Group B

Fault:

Permanent electrical fault between cylinder group B and another group.

The reasons:

Malfunction in electrical wiring or injectors. Perhaps the fault is a short circuit in the wiring between groups of cylinders.

Notes:

Cylinders B on a 5-cylinder engine include cylinders 1, 3 and 4, on a 6-cylinder engine – 1, 2 and 3, on an 8-cylinder engine – 1, 4, 6 and 7. A fault appears only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Check nozzles, wiring and pin connections.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4462

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Fault in the electrical wiring or in the nozzle of the cylinder number 5. Perhaps the fault is a short circuit in one or more of the electromagnetic valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the cylinder block and the positive terminal of the solenoid valve and the negative terminal, respectively. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the cylinder block and the positive wire and negative wire, respectively. An infinite resistance value (8 ohms) must be obtained.

Connect the electrical wires to the engine control unit and measure the resistance between the power wire or ground wire and the ground point of the control unit. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4465

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Fault in the electrical wiring or in the nozzle of the cylinder number 6. Perhaps the fault is a short circuit in one or more of the electromagnetic valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Connect the engine control unit wiring and measure the resistance between the power wire or ground wire and the control unit's mass point. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a

danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4468

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Fault in the electrical wiring or in the nozzle of the cylinder number 7. Perhaps the fault is a short circuit in one or more of the solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Connect the engine control unit wiring and measure the resistance between the power wire or ground wire and the control unit's mass point. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4471

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8

Fault:

Permanent short circuit in the electrical wiring going to the injectors.

The reasons:

Fault in the electrical wiring or in the nozzle of the cylinder number 8. Perhaps the fault is a short circuit in one or more solenoid valves or in the electrical wiring.

Notes:

Fault occurs only when the engine is running. The control unit tries to constantly use the nozzles, regardless of the presence of faults.

Elimination:

Disconnect the wiring from the control unit and from the solenoid valve on the faulty injectors.

Measure the resistance of the solenoid valve.

Measure the resistance between the positive or negative connection of the solenoid valve and the cylinder block.

An infinite resistance value (8 ohms) must be obtained.

Check the wiring pin connections to the control unit and the braid wiring in the cylinder head.

Measure the resistance between the ground wire or power wire and the cylinder block. An infinite resistance value (8 ohms) must be obtained.

Connect the engine control unit wiring and measure the resistance between the power wire or ground wire and the control unit's mass point. An infinite resistance value (8 ohms) must be obtained.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4472

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or

replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4473

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4474

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.
The code version is not supported by the control unit.
Too many identical codes were programmed for different injectors.

Notes:

While the fault code remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4475

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.
The code version is not supported by the control unit.
Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4476

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4477

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control

unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4478

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4479

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8, code failure or checksum error

Fault:

The injector code does not contain acceptable values.

The reasons:

Possible faults:

The injector code does not contain an acceptable value.

The code version is not supported by the control unit.

Too many identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot make adjustments due to process tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle. Or replace the nozzle with a version approved for the control unit. Erase the trouble codes and turn off and turn on the ignition after each action, since the test is performed only when the control unit is activated.

EMS 4482

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel metering inlet valve

Fault:

The voltage in the electrical circuit was below normal.

The reasons:

Possible reasons:

Short circuit to + battery ground wire.

An open or short to ground in the supply wire of the fuel intake valve inlet circuit.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the resistance of the fuel metering inlet valve. For information on limit values, refer to the item information.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a

danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4483

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel metering inlet valve

Fault:

One or more faults in the fuel metering inlet valve.

The reasons:

There is one or more faults in the fuel metering inlet valve.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

Elimination:

Perform a general troubleshooting procedure for this item. First diagnose active or inactive item trouble codes. If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4484

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel metering inlet valve

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to power + battery wires in the electrical circuit of the intake valve fuel metering.

Notes:

At idle speed, the EGR system is deactivated and the engine speed is blocked.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the resistance of the fuel metering inlet valve. For information on limit values, refer to the item information.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4487

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Voltage supply to the mass air flow sensor

Fault:

The supply voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery + in the supply voltage circuit.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4488

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Failed mass flow sensor adaptation

Fault:

The engine control unit calculates that more air enters the engine than is measured by the T126 mass flow sensor.

During the adaptation of the mass flow sensor, the highest possible permissible value is obtained, which can be adapted at one operating point.

The reasons:

Possible causes of a malfunction can be the following:

leaks in the EGR system or in the charge air system

mass flow sensor T126 gives incorrect readings

wrong values ??from the back pressure sensor in the exhaust system T125, charge air pressure sensor T122 or charge air temperature sensor T121

Notes:

The engine control unit uses information from the mass flow sensor to regulate the EGR content and to calculate the ratio of air and fuel. The calculation is also performed taking into account the engine speed, the amount of fuel injected and the signals from the backpressure sensor in the exhaust system, the charge air pressure sensor and the charge air temperature sensor. The calculated amount of air is compared with the signal from the mass flow sensor at certain predetermined engine speeds (operating points). The adaptation of the mass flow sensor is performed in such a way that the calculated value coincides with the measured value at these engine speeds. Adaptation occurs continuously throughout the work. During adaptation, the EGR valve closes temporarily. Adaptation occurs every hour.

If there is a leak in the EGR system or the charge-air system, or in the event of a failure of any of the sensors, the adaptation of the mass flow sensor may fail. If the difference between the calculated and measured mass flow rate is more than 30%, the adaptation will reach its minimum or maximum allowable value and a fault code will be generated.

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check for leaks in the EGR system or in the charge-air system. Perform an “EGR check for leaks” in SDP3, if available.

Check the mass flow sensor T126, the back pressure sensor in the exhaust system T125, the charge pressure sensor T122 or the charge temperature sensor T121.

Check the connectors and electrical wiring.

After diagnostics and repair, always perform the “EGR check for invalidation of malfunction codes” if this malfunction code has been generated. This check can be performed using SDP3.

If the DTC persists after checking, it is likely that the repair was performed incorrectly or the software in the engine control unit is out of date. With SDP3 / VERA, make sure the car engine software is updated to the latest version. If the software is old, program the EMS as a spare part.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4489

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Failed mass flow sensor adaptation

Fault:

The engine control unit calculates that less air enters the engine than is measured by the mass flow sensor T126.

During the adaptation of the mass flow sensor, the lowest possible value is obtained, which can be adapted at one operating point.

The reasons:

Possible causes of a malfunction can be the following:

leaks in the EGR system or in the charge air system

mass flow sensor T126 gives incorrect readings

wrong values from the back pressure sensor in the exhaust system T125, charge air pressure sensor T122 or charge air temperature sensor T121

Notes:

The engine control unit uses information from the mass flow sensor to regulate the EGR content and to calculate the ratio of air and fuel. The calculation is also performed taking into account the engine speed, the amount of fuel injected and the signals from the backpressure sensor in the exhaust system, the charge air pressure sensor and the charge air temperature sensor. The calculated amount of air is compared with the signal from the mass flow sensor at certain predetermined engine speeds (operating points). The adaptation of the mass flow sensor is performed in such a way that the calculated value coincides with the measured value at these engine speeds. Adaptation occurs continuously throughout the work. During adaptation, the EGR valve closes temporarily. Adaptation occurs every hour.

If there is a leak in the EGR system or the charge-air system, or in the event of a failure of any of the sensors, the adaptation of the mass flow sensor may fail. If the difference between the calculated and measured mass flow rate is more than 30%, the adaptation will reach its minimum or maximum allowable value and a fault code will be generated.

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check for leaks in the EGR system or in the charge-air system. Perform an "EGR check for leaks" in SDP3, if available.

Check the mass flow sensor T126, the back pressure sensor in the exhaust system T125, the charge pressure sensor T122 or the charge temperature sensor T121.

Check the connectors and electrical wiring.

After diagnostics and repair, always perform the "EGR check for invalidation of malfunction codes" if this malfunction code has been generated. This check can be performed using SDP3.

If the DTC persists after checking, it is likely that the repair was performed incorrectly or the software in the engine control unit is out of date. With SDP3 / VERA, make sure the car engine software is updated to the latest version. If the software is old, program the EMS as a spare part.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4491

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Safety valve

Fault:

The safety valve has tripped.

The reasons:

The pressure in the pressure accumulator exceeded the opening pressure of the safety valve.

Notes:

As long as this DTC is active, the engine power is limited and the EGR system is deactivated.

The fault code cannot be cleared while the fault is present.

Elimination:

Take the necessary actions to eliminate the cause of other fault codes for the fuel metering inlet valve.

Then check the supply pressure as described in L6 of document 03: 14-01, edition 2. Continue with the “trouble tree” if the pressure is too high. Otherwise, replace the fuel metering inlet valve.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 4494

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel metering inlet valve

Fault:

The resistance in the fuel metering inlet valve is outside of the limit values.

The reasons:

Possible malfunction may be a short circuit in the intake valve of fuel metering or poor contact in the connectors and wires.

Notes:

No description

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the resistance of the fuel metering inlet valve. For information on limit values, refer to the item information.

EMS 4495

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1

Fault:

Possible faults:

The nozzle of cylinder 1 injects too much or too little fuel into the cylinder.

Torque from cylinder 1 is very different from torque from other cylinders.

The reasons:

Possible reasons:

Injector malfunction.

Faulty fuel metering intake valve.

Compression too low.

Notes:

Reduced engine power.

Elimination:

Perform a cylinder power check.

If the test value for the cylinder 1 is significantly different from the values for the other cylinders, this may be due to low compression or injector malfunction. Replace the nozzle.

If the test result for cylinder 1 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4496

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2

Fault:

Possible faults:

cylinder injector 2 injects too much or too little fuel in the cylinder.

Torque from the barrel 2 differs from the torque from the other cylinder.

The reasons:

Possible reasons:

Injector malfunction.

Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 2 is significantly different from the values for the other cylinders, this may be due to low compression or injector malfunction. Replace the nozzle.

If the test result for cylinder 2 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4497

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3

Fault:

Possible faults:

The nozzle of cylinder 3 injects too much or too little fuel into the cylinder.

Torque from cylinder 3 is very different from torque from other cylinders.

The reasons:

Possible reasons:

Injector malfunction.

Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 3 is significantly different from the value for other cylinders, this may be due to low compression or injector failure. Replace the nozzle.

If the test result for cylinder 3 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4498

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4

Fault:

Possible faults:

The nozzle of cylinder 4 injects too much or too little fuel into the cylinder.
Torque from cylinder 4 is very different from torque from other cylinders.
The reasons:

Possible reasons:

Injector malfunction.
Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 4 is significantly different from the value for other cylinders, this may be due to low compression or failure of the nozzle. Replace the nozzle.

If the test result for cylinder 4 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4499

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5

Fault:

Possible faults:

The nozzle of cylinder 5 injects too much or too little fuel into the cylinder.
Torque from cylinder 5 is very different from torque from other cylinders.
The reasons:

Possible reasons:

Injector malfunction.
Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 5 is significantly different from the value for other cylinders, this may be due to low compression or failure of the injector. Replace the nozzle.

If the test result for cylinder 5 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4500

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6

Fault:

Possible faults:

The nozzle of cylinder 6 injects too much or too little fuel into the cylinder.

Torque from cylinder 6 is very different from torque from other cylinders.

The reasons:

Possible reasons:

Injector malfunction.

Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 6 is significantly different from the value for other cylinders, this may be due to low compression or failure of the injector. Replace the nozzle.

If the test result for cylinder 6 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4501

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7

Fault:

Possible faults:

The nozzle of cylinder 7 injects too much or too little fuel into the cylinder.
Torque from cylinder 7 is very different from torque from other cylinders.
The reasons:

Possible reasons:

Injector malfunction.
Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 7 is significantly different from the value for other cylinders, this may be due to low compression or failure of the injector. Replace the nozzle.

If the test result for cylinder 7 does not differ from the results for other cylinders. Measure ramp pressure. If the rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4502

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8

Fault:

Possible faults:

The nozzle of cylinder 8 injects too much or too little fuel into the cylinder.
Torque from cylinder 8 is very different from torque from other cylinders.
The reasons:

Possible reasons:

Injector malfunction.
Compression too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

Elimination:

Perform a cylinder power check.

If the test value for cylinder 8 is significantly different from the value for other cylinders, this may be due to low compression or failure of the injector. Replace the nozzle.

If the test result for cylinder 8 does not differ from the results for other cylinders. Measure ramp pressure. If the

rail pressure fluctuates, check the fuel metering inlet valve.

EMS 4505

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4506

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4507

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4508

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4509

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4510

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4511

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7, code version fail

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

While the fault code remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4512

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8, code version failed

Fault:

The injector code does not contain acceptable values.

The reasons:

The engine control unit cannot process the injector code version.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. The control unit cannot adjust process tolerances. This check is performed when the control unit is activated.

Elimination:

Switch to a nozzle with a code that the engine control unit can process.

EMS 4513

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 1, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4514

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 2, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4515

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 3, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4516

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 4, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is

activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4517

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 5, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4518

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 6, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

While the fault code remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4519

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 7, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4520

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Cylinder 8, code failure

Fault:

The injector code does not contain acceptable values.

The reasons:

Two or more identical codes were programmed for different injectors.

Notes:

As long as the DTC remains active, the control unit does not perform an individual adaptation of the injectors. As a result, it cannot adjust the technological tolerances. This check is performed when the control unit is activated.

Elimination:

Make sure that all the programmed codes are unique and that they correspond to the corresponding nozzle.

EMS 4528

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Outdoor temperature sensor

Fault:

Outdoor sensor malfunction.

The reasons:

There is a malfunction in the outdoor temperature sensor or connectors or wiring.

Notes:

The EGR system can be deactivated if the air temperature is too low. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

Elimination:

Check the outside temperature sensors and the mass flow sensor for the air intake.

Make sure that the hose between the turbocharger and the air cleaner is in good condition and not leaking.

Clear the DTC by turning off the key with the key and wait 15 seconds. Start the engine and allow the vehicle to drive at high speed (above 40 km / h) for approximately 10 minutes.

To deactivate the DTC, you must drive the vehicle at a speed above 40 km / h. If the car travels at a lower speed, deactivation will take longer.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

EMS 4529

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fuel metering inlet valve

Fault:

The fuel pressure increased during engine braking when the closing of the fuel metering inlet valve was requested.

The reasons:

Possible reasons:

Feed pressure too high.

Fuel metering inlet valve sticking or leaking.

Faulty diffuser in high pressure pump.

Notes:

When the fuel system's safety valve trips, another fault code is generated.

Elimination:

Replace the fuel metering inlet valve.

If the fault persists, check the supply pressure as described in Section L6 of Document 03: 14-01, Edition 2.

If the pressure is too high, troubleshooting should continue in the Lc troubleshooting tree. Otherwise, replace the diffuser when replacing the high pressure fuel pump.

EMS 4530

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Engine Low Pressure Circuit

Fault:

The pressure in the low pressure circuit is too high.

The reasons:

Possible reasons:

Pressure control valve defective.

Pressure sensor defective.

Notes:

Engine may operate unevenly.

Elimination:

Measure the pressure and compare with the set point.

Check pressure control valve.

EMS 4531

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Engine Low Pressure Circuit

Fault:

The pressure in the low pressure circuit is too low.

The reasons:

Possible reasons:

Pressure control valve defective.

Leakage in the gas supply circuit.

Pressure sensor defective.

Power failure of pressure sensor.

Notes:

Engine may operate unevenly.

Elimination:

Check the power supply of the pressure sensor.

Measure the pressure and compare with the set point.

Check pressure control valve.

Search for leaks in the gas supply circuit.

EMS 4544

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 1

Fault:

Torque from cylinder 1 is too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle 1 malfunction.

Cylinder 1 Injector Control Valve Malfunction

Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 1 nozzle.
Check the compression pressure.

EMS 4545

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 2

Fault:

Torque from cylinder 2 is too high or too low.

The reasons:

Possible reasons:

Cylinder 2 Injector Malfunction.
Cylinder 2 Injector Control Valve Malfunction.
Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 2 nozzle.
Check the compression pressure.

EMS 4546

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 3

Fault:

Torque from cylinder 3 is too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle 3 malfunction.
Cylinder 3 Injector Control Valve Malfunction.
Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 3 nozzle.

Check the compression pressure.

EMS 4547

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 4

Fault:

The torque from cylinder 4 is too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle failure 4.

Cylinder 4 Injector Control Valve Malfunction.

Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the nozzle cylinder 4.

Check the compression pressure.

EMS 4548

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 5

Fault:

Torque from cylinder 5 is too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle 5 malfunction.
Cylinder 5 Injector Control Valve Malfunction.
Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 5 nozzle.
Check the compression pressure.

EMS 4549

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 6

Fault:

Torque from cylinder 6 is too high or too low.

The reasons:

Possible reasons:

Cylinder Injector Malfunction 6.
Cylinder 6 Injector Control Valve Malfunction.
Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 6 nozzle.
Check the compression pressure.

EMS 4550

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 7

Fault:

Torque from cylinder 7 too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle 7 malfunction.

Cylinder 7 Injector Control Valve Malfunction.

Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the nozzle cylinder 7.

Check the compression pressure.

EMS 4551

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Cylinder 8

Fault:

Torque from cylinder 8 is too high or too low.

The reasons:

Possible reasons:

Cylinder nozzle failure 8.

Cylinder 8 Injector Control Valve Malfunction.

Compression pressure too low.

Notes:

The engine may operate irregularly or may be seriously damaged.

Elimination:

Check the cylinder 8 injector.

Check the compression pressure.

EMS 4608

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Crankshaft speed signals

Fault:

When the engine is running, the signals from the two speed sensors do not match.

The reasons:

If fault code 4608 was registered and fault code 4352 was not, this may be due to the fact that the electrical wiring going to one of the engine crankshaft speed sensors is confused. The control unit cannot determine which. If, however, both DTC 4608 and DTC 4352 were registered, this may be due to the fact that the engine took a few turns in the opposite direction, for example, if the engine stalled while moving uphill.

If, when you try to start the engine, fault codes 4608 and 4352 are generated, this may be due to the fact that the crankshaft speed sensors of the engine were interchanged.

Notes:

If DTC 4608 was registered and DTC 4352 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

EMS 4609

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Crankshaft speed signals

Fault:

The speed signal from the engine crankshaft speed sensor is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The control unit increases the sensitivity of the sensor so that a fault code is not generated. Therefore, a fault code will not be generated again even if the fault still persists. This increase in sensor sensitivity may lead to the generation of other trouble codes. These DTCs can be ignored. The automatic adjustment performed by the control unit does not in any way affect the operation of the control unit.

The fault does not affect the operation of the engine, i.e. There is no power limit.

Elimination:

If the DTC was generated in more than two cases, check the distance between the sensor and the flywheel (a maximum of 1.5 mm is allowed).

EMS 4609

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed, protection against engine revs

Fault:

The crankshaft speed was above 2900 rpm.

The reasons:

Operator error, for example, improper downshifting

A malfunction can also be caused by oil leaking from the turbocharger into the air intake system or fuel leaking from one of the injectors into the cylinders.

Notes:

The engine brake is activated and brakes the engine with maximum efficiency. The fault remains active until the engine speed drops below 2500 rpm.

Elimination:

If there are no faulty elements after the engine speed is reduced, the engine is working normally. Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4610

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed, protection against engine revs

Fault:

The crankshaft speed was above 2750 rpm.

The reasons:

Operator error, for example, improper downshifting

A malfunction can also be caused by oil leaking from the turbocharger into the air intake system or fuel leaking

from one of the injectors into the cylinders.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Turn off and turn on the ignition with the ignition key to restart the engine control unit. If the elements have not been damaged when the allowed speed is exceeded, the engine will work normally again. Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4610

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

Open circuit engine speed sensor. This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code of 4615 was simultaneously generated, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the crankshaft speed sensors is faulty, as long as the fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4611

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

The signal from the engine speed sensor has strong interference.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code of 4615 was simultaneously generated, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the crankshaft speed sensors is faulty, as long as the fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4612

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

The engine speed sensor indicates a too large increase in engine speed over the period between two consecutive pulses.

The reasons:

This fault may occur when the polarity of the two speed sensors is switched on.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code of 4615 was simultaneously generated, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the crankshaft speed sensors is faulty, as long as the fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4613

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

The engine speed sensor indicates a too large decrease in engine speed over a period of time between two consecutive pulses.

The reasons:

Open circuit engine speed sensor.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code of 4615 was simultaneously generated, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the crankshaft speed sensors is faulty, as long as the fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4614

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

The signal from the crankshaft speed sensor was wrong from the start.

The reasons:

The engine speed sensor produces an incorrect signal.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If DTC 4608 was registered and DTC 4352 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4615

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine speed sensor 2

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

If one of the engine speed sensors is faulty, the maximum torque of the engine is reduced by 30%.

Increased engine speed at idle will also be lower than usual.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4626

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine position sensor 2 is faulty.

Fault:

Engine 2 speed sensor defective. Violations on the signal from eps1. Detection is detected when the engine is running or at the beginning. The engine management system uses an alternative method to find the phase of the engines, for example, EPS 1 or the camshaft position sensor.

The reasons:

Incorrectly installed or incorrect sensor.

Notes:

No description

Elimination:

Check the sensor installation. Check the sensor for electrical problems. Check the connections to the control unit.
Replace sensor.

EMS 4627

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine position sensor 1 is faulty.

Fault:

Engine 1 speed sensor is faulty. Violations on the signal from eps2. Detection is detected when the engine is running or at the beginning. The engine management system uses an alternative method to find the phase of the engines, for example, EPS 2 or the camshaft position sensor.

The reasons:

Incorrectly installed or incorrect sensor.

Notes:

No description

Elimination:

Check the sensor installation. Check the sensor for electrical problems. Check the connections to the control unit.
Replace sensor.

EMS 4640

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4643 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4641

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4643 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4642

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4643

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4644

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4645

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4646

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 2

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4656

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4659 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4657

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by

the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4659 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4658

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4659

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4660

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4661

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4662

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 3

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4672

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4675 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also

check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4673

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4675 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4674

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by

the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4675

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also

check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4676

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4677

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4678

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 4

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4688

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4691 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4689

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If fault code 4691 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also

check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4690

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4691

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4692

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4693

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4694

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 5

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4704

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 4707 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4705

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 4707 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4706

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4707

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4708

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4709

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4710

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 6

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4720

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 4723 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4721

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 4723 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4722

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4723

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4724

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4725

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4726

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 7

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4736

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 4739 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve

cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4737

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 4739 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or electrical wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4738

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4739

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 4740

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4741

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 4742

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pump nozzle cylinder 8

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 4745

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pressure in the fuel supply system

Fault:

Feed pressure for a period exceeding the allowable value.

The reasons:

Possible reasons:

The pressure sensor in the fuel line shows incorrect values.

Bypass valve malfunction.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, coolant temperature sensor or fan speed sensor.

Notes:

The pressure sensor in the fuel line, the coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

During the entire time when the pressure in the fuel line exceeds the set value, the fuel shut-off solenoid valve is closed. If the fuel pressure sensor is faulty, then the fuel shut-off solenoid valve when the engine is running is constantly open.

Elimination:

Check the fuel line pressure sensor, coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

Make sure the bypass valve opens.

EMS 4752

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel shutoff valve

Fault:

High voltage is constantly applied to the outputs of the fuel shut-off solenoid valve.

The reasons:

Breakage of the fuel shut-off solenoid valve wiring or breakage of the valve winding. The cause of the fault may also be a short circuit to the wire connected to the positive terminal of the battery.

Notes:

If an open circuit occurs, the fuel cut-off solenoid valve closes and the engine stops.

In the event of a short circuit, the fuel shut-off solenoid valve will be constantly open.

Elimination:

Check the wiring and fuel shut-off solenoid valve.

EMS 4753

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel shutoff valve

Fault:

The fuel shut-off solenoid valve does not work.

The reasons:

Short circuit or short to ground in the fuel shut-off valve circuit.

Notes:

The fuel shut-off valve will work and the engine will lose power.

Elimination:

Check the wiring and fuel shut-off solenoid valve.

EMS 4754

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel shutoff valve

Fault:

When the engine is stopped by turning off the fuel shut off valve, the fuel pressure in the low pressure line drops very slowly.

The reasons:

Possible reasons:

Fuel shut-off valve stuck open.

If a malfunction code 4752 or 4753 was also generated, there may be a short circuit in the electrical circuit. Otherwise, either the fuel shut-off valve or the fuel supply pressure sensor is faulty.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, coolant temperature sensor or fan speed sensor.

Since the DTC is generated when the engine is turned off, it can only be deleted after the engine has been successfully turned off.

Notes:

The pressure sensor in the fuel line, the coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

When the engine is turned off with the ignition key, the solenoid valves will continue to try to keep the engine running, while the fuel shut-off solenoid valve sends a signal to turn off the engine. If this fails, i.e. the pressure in the fuel line will not decrease, a malfunction code is generated, after which the engine is turned off by the electromagnetic valves.

A fault code is generated only in the case of three consecutive failed attempts to turn off the engine.

While the fault is active, the maximum engine torque is reduced by 30%.

Since the DTC is generated when the engine is turned off, it can only be deleted after the engine has been successfully turned off.

Elimination:

Check whether DTC 4752 or 4753 was generated. If so, check the fuel shut-off valve and the wiring.

If DTC 4752 or 4753 was not generated, first replace the fuel shut-off valve and then, if necessary, the pressure sensor in the fuel line.

Check the fuel line pressure sensor, coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 4757

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The torque developed by the front group of cylinders (cylinders 1-3) significantly exceeds the torque developed by the rear group of cylinders (cylinders 4-6).

The reasons:

One of the fuel control or solenoid injection timing solenoid valves does not work correctly. In this case, the torque developed by one of the two groups of cylinders does not correspond to the specified value. This may be due to the fact that an excess amount of fuel enters the front group cylinders or too little fuel enters the rear group cylinders.

If the engine is gaining momentum, the front-group cylinder fuel control solenoid valve is stuck in a position where too much fuel flows into the cylinders.

If the engine is slowing down, the rear cylinder fuel control solenoid valve is stuck in a position where there is too little fuel in the cylinders.

If the engine drops speed and white smoke appears with the exhaust gases, then the solenoid valve controlling the injection timing of the rear group of cylinders lets in insufficient amount of fuel. Fuel injection starts so late that the fuel cannot ignite.

A malfunction may also be caused by leakage of the sealing rings on the pump nozzles.

Notes:

Uneven engine performance due to engine speed limiting at 500 ... 550 rpm. The fuel shut-off solenoid valve is faulty.

Elimination:

If the engine starts to gain momentum, then replace the front cylinder group fuel control solenoid valve.

If the engine slows down, replace the rear cylinder fuel control solenoid valve.

If the engine has lost momentum and white smoke has appeared with the exhaust gases, then replace the solenoid valve controlling the advance angle of injection of the rear group of cylinders.

If you suspect a leak in the pump nozzles, replace all o-rings.

EMS 4759

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The torque developed by the rear group of cylinders (cylinders 4-6) significantly exceeds the torque developed by the front group of cylinders (cylinders 1-3).

The reasons:

One of the fuel control or solenoid injection timing solenoid valves does not work correctly. In this case, the torque developed by one of the two groups of cylinders does not correspond to the specified value. This may be due to the fact that too little fuel flows into the front group cylinders or an excess amount of fuel flows into the rear group cylinders.

If the engine is gaining momentum, the rear cylinder fuel control solenoid valve is stuck in a position where there is too much fuel in the cylinders.

If the engine is slowing down, the front cylinder group fuel control solenoid valve is stuck in a position where there is too little fuel in the cylinders.

If the engine drops speed and white smoke appears with the exhaust gases, then the solenoid valve controlling the advance injection angle of the front group of cylinders lets in insufficient amount of fuel. Fuel injection starts so late that the fuel cannot ignite.

Notes:

Uneven engine performance due to engine speed limiting at 500 ... 550 rpm. The fuel shut-off solenoid valve is faulty.

Elimination:

If the engine starts to gain momentum, then replace the rear cylinder fuel control solenoid valve.

If the engine slows down, then replace the front cylinder group fuel control solenoid valve.

If the engine has lost momentum and white smoke has appeared with the exhaust gases, replace the solenoid valve controlling the advance injection angle of the front cylinder group.

EMS 4762

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control unit parameter

Fault:

In the engine control unit there is a parameter that indicates whether there is a clutch on the car.

The engine control unit also receives information about the status of the clutch from the coordinator on the CAN bus.

This DTC is generated if the setting in the engine control unit does not fully match the information that is received via the CAN bus.

The reasons:

A car can be converted without properly adapting the engine control unit, coordinator and SOPS file.

The engine control unit or coordinator could be replaced without proper programming of spare parts.

Notes:

No description

Elimination:

Check whether the car has been upgraded, which affects this parameter.

Make sure the car has the correct SOPS file and program the spare parts for the engine control unit and coordinator.

EMS 4768

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the electromagnetic valve of the amount of fuel for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4768

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Cutoff Valve 2

Fault:

Short to battery + in the high pressure side gas cutoff valve circuit.

The reasons:

Damaged wiring or connectors.

Notes:

The valve closes and the engine shuts off when the gas in the circuit runs out.

Elimination:

Check wiring and connectors. Check the gas shut-off valve.

EMS 4769

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Cutoff Valve 2

Fault:

High pressure side gas shut-off valve does not work.

The reasons:

Damaged wiring or connectors.

Notes:

The valve closes and the engine shuts off when the gas in the circuit runs out.

Elimination:

Check wiring and connectors. Check the gas shut-off valve.

EMS 4770

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

There is no signal to control the fuel supply of the front group of cylinders (cylinders 1-3).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4771

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Cutoff Valve 1

Fault:

Short to battery + on the low pressure side of the gas cut-off valve.

The reasons:

Damaged wiring or connectors.

Notes:

The valve closes and the engine shuts off when the gas in the circuit runs out.

Elimination:

Check wiring and connectors. Check the gas shut-off valve.

Check the main relay.

EMS 4771

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid control valve for the fuel supply of the front group of cylinders (cylinders 1-3) are very different from those of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4772

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

Solenoid valve for controlling the supply of fuel to the front group of cylinders (cylinders 1-3) is supplied with too low a voltage.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. Reduction of the moment occurs during only that time when the DTC is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If trouble code 5476 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 4772

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Cutoff Valve 1

Fault:

Low pressure side gas shut-off valve does not work.

The reasons:

Damaged wiring or connectors, faulty main relay.

Notes:

The valve closes and the engine shuts off when the gas in the circuit runs out.

Elimination:

Check wiring and connectors. Check the gas shut-off valve.

Check the main relay.

EMS 4773

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas Cutoff Valve 1

Fault:

Short to ground in the low pressure side of the low pressure valve.

The reasons:

Damaged wiring or connectors.

Notes:

The valve closes and the engine shuts off when the gas in the circuit runs out.

Elimination:

Check wiring and connectors. Check the gas shut-off valve.

Check the main relay.

EMS 4774

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Low pressure sensor, gas

Fault:

The gas pressure is above the limit value.

The reasons:

The low pressure sensor of the gas supply system is shorted to battery + or disconnected.

Notes:

Engine torque is limited.

Engine may operate irregularly or stall.

Elimination:

Check sensor, wiring and connectors. Repair or replace as necessary.

EMS 4775

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Low pressure sensor, gas

Fault:

The low pressure sensor of the gas supply system indicates a pressure below the limit value.

The reasons:

A short to ground or an open in the low pressure sensor circuit.

Notes:

Engine torque is limited.

Engine may operate irregularly or stall.

Elimination:

Check the low pressure sensor for a short to ground.

Check the system for leaks.

Check the main relay.

EMS 4780

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor, gas tank

Fault:

The pressure sensor in the gas tank generates too low a voltage value (<0.5 V).

The reasons:

There is a fault in the sensor or the cable harness. Short to ground.

Notes:

Engine may operate unevenly.

Elimination:

Check the pressure in the gas tank. Check for leaks.

Check for a short in the pressure sensor circuit.

Check sensor, wiring and connectors. Repair or replace as necessary.

EMS 4781

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor, gas tank

Fault:

The gas tank pressure sensor generates a too high voltage value (> 4.5 V).

The reasons:

There is a fault in the sensor or the cable harness.

Notes:

Due to the lack of information on the level of fuel remaining, there is a danger of using up all the fuel.

Elimination:

Check the pressure in the gas tank. Check for leaks.

Check for a short in the pressure sensor circuit.

Check sensor, wiring and connectors. Repair or replace as necessary.

EMS 4782

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor, gas tank

Fault:

The measured pressure in the gas tank is incorrect.

The reasons:

There is a malfunction in the pressure sensor or cable harness.

Incorrect pressure due to leaks.

Notes:

Engine may operate unevenly.

Elimination:

Check sensor, wiring and connectors. Repair or replace as necessary.

Check the pressure in the gas tank. Check for leaks.

EMS 4783

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas temperature sensor

Fault:

The temperature sensor generates too low a voltage value.

The reasons:

There may be a short to ground or an open circuit in the temperature sensor electrical circuit.

Notes:

Engine performance is deteriorating.

Elimination:

Check the sensor for a short circuit or open circuit.

Replace sensor.

EMS 4784

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas temperature sensor

Fault:

The temperature sensor generates a too high voltage value.

The reasons:

The temperature sensor may have a short to battery.

Notes:

Engine performance is deteriorating.

Elimination:

Check sensor for short circuit.

Replace sensor.

EMS 4784

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the solenoid valve of the amount of fuel for the back row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4785

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the solenoid valve of the amount of fuel for the back row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4785

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Mass flow sensor

Fault:

The mass flow sensor generates a too high value.

The reasons:

Implausible signal or short circuit to + battery.

Notes:

The engine runs irregularly or stalls.

Elimination:

Check sensor, wiring and connectors. Repair or replace as necessary.

EMS 4786

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Mass flow sensor

Fault:

The mass flow sensor generates too low a value.

The reasons:

Implausible signal or electrical fault.

Notes:

The engine runs irregularly or stalls.

Elimination:

Check sensor, wiring and connectors. Repair or replace as necessary.

EMS 4786

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

There is no signal to control the fuel supply to the rear group of cylinders (cylinders 4-6).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4787

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve for controlling the fuel supply of the rear group of cylinders (cylinders 4-6) are very different from those of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the

accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4788

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The rear cylinder group fuel control solenoid valve (cylinders 4-6) is supplied with too low a voltage.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

If trouble code 5476 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 4800

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4800

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

The exhaust gas management system EEC has a dangerous, serious functional malfunction associated with a diesel particulate filter.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine stops and the red warning lamp engine.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4801

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

The exhaust gas management system EEC has a serious functional malfunction associated with the particulate filter.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The yellow pilot lamp and filter regeneration is not allowed.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4801

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4802

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

There is no control signal for the advance injection angle of the front group of cylinders (cylinders 1-3).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4802

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

The exhaust gas management system EEC has a dangerous, minor functional problem associated with the diesel particulate filter.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The red control lamp of the engine lights up and the idling speed increases.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4803

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

The exhaust gas management system EEC has a minor functional fault associated with the diesel particulate filter.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine warning light comes on.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4803

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve control the injection advance timing of the front group of cylinders (cylinders 1-3) are very different from the parameters of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4804

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The electromagnetic valve of control of the injection timing of the front group of cylinders (cylinders 1-3) is energized too low.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. Reduction of the moment occurs during only that time when the DTC is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If trouble code 5476 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.
EMS 4804

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

The exhaust gas management system EEC has a functional fault related to the particulate filter.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine warning light comes on and filter regeneration is not allowed. If the engine is equipped with an EGR system, this system shuts down.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4805

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Dangerous minor functional failure in the SCR system.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine warning light comes on and the particulate filter is not allowed to regenerate.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4806

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Severe functional failure in the SCR system.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine warning light comes on.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4807

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Dangerous significant functional failure in the SCR system.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The red control lamp of the engine lights up and regeneration of the diesel particulate filter is not allowed.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4808

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Minor functional failure in the SCR system.

The reasons:

The primary fault code is present in the EEC control unit.

Notes:

The engine warning light comes on.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4809

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

NOx sensor after catalytic converter.

The reasons:

NOx sensor after catalytic converter.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4810

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

NOx sensor in front of the catalytic converter.

The reasons:

NOx sensor in front of the catalytic converter.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4811

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Catalytic temperature.

The reasons:

Catalytic temperature.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4812

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Oxidizing catalytic converter.

The reasons:

Oxidizing catalytic converter.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4814

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Particulate filter.

The reasons:

Particulate filter.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4815

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Neutralization of exhaust gases

Fault:

Temperature sensor.

The reasons:

Temperature sensor.

Notes:

Search for primary fault code in the EEC control unit.

Elimination:

Search for primary fault code in the EEC control unit.

EMS 4816

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the rear row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4817

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the rear row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4818

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

There is no control signal for the injection timing of the rear cylinder group (cylinders 4-6).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4819

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve control the injection advance angle of the rear cylinder group (cylinders 4-6) are very different from those of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 4820

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fuel supply to cylinders

Fault:

The injection timing advance solenoid valve of the rear cylinder group (cylinders 4-6) is supplied with too low a voltage.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. The moment reduction occurs during only that time when the wrong code is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If trouble code 5476 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 4864

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed

Fault:

The engine speed exceeded the allowable value.

The reasons:

Incorrect handling, for example, incorrectly shifted to a lower gear.

Notes:

The fuel supply to the engine stops at 3000 rpm. Restoration of the fuel supply occurs after the engine speed becomes less than 3000 rpm. In this case, the engine braking mechanism works with maximum efficiency. After reducing the engine speed, normal engine operation is restored.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4865

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Crankshaft speed signals

Fault:

When the engine is running, the signals from the two speed sensors do not match.

The reasons:

If fault code 4865 was registered, and fault code 4881 was not, this may be due to the fact that the electrical wiring going to one of the engine crankshaft speed sensors is confused.

The control unit cannot determine which.

If, however, both fault code 4865 and fault code 4881 were registered, this may be due to the fact that the engine took a few turns in the opposite direction. The fault code becomes inactive when the engine stops rotating in the opposite direction.

If when you try to start the engine, fault codes 4865 and 4881 are generated, this may be due to the fact that the crankshaft speed sensors of the engine were interchanged.

Notes:

If DTC 4865 has been registered, and DTC 4881 is not, as long as the fault is present, the maximum engine torque is reduced by 30%.

Increased engine speed at idle will also be lower than usual.

Elimination:

Check sensors, connectors and wiring.

EMS 4865

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed signals, sensor T74

Fault:

When the engine is running, the signals from the two speed sensors do not match. An erroneous signal is generated by sensor 1 ..

The reasons:

Malfunction may be due to improper connection of the engine speed sensor wires. The control unit cannot determine which.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Check engine speed sensors, electrical connectors and wiring.

Ensure that the engine speed sensors are properly connected to the control unit.

EMS 4866

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed signals, sensor T74

Fault:

The signal level from the crankshaft speed sensor 1 is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The engine speed signal from the engine speed sensor is extremely important to many functions of the engine control unit. If the engine speed signal is incorrect, many other functions may receive an incorrect signal, resulting in improper operation.

Elimination:

Check the distance between the engine speed sensor and the flywheel. It should not exceed 1.5 mm.

Check the connectors and wiring.

Ensure that the engine speed sensors are properly connected to the control unit.

EMS 4866

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed sensor 1 signals

Fault:

The signal level from the crankshaft speed sensor 1 is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The crankshaft speed signal from sensor 1 is too low, despite the fact that the maximum sensitivity of the control unit has been set.

The control unit may poorly read a signal with a low level, which will lead to an uneven operation of the engine or to stop it.

This malfunction will cause recording and other malfunction codes. Such codes can be disregarded until a low signal level is corrected.

Elimination:

Check the distance between the engine speed sensor and the flywheel; the distance must not exceed 1.5 mm. Check sensors and wiring.

EMS 4867

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

Open circuit engine speed sensor. This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a fault code 4872 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4867

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed sensor 1 signals

Fault:

Interference in the signal from the engine speed sensor 1. The sensor pulses are outside the expected range.

The reasons:

The gap in the electrical signal circuit from the engine speed sensor. This DTC can be generated when the engine is started in very cold weather conditions or when the battery is low.

Notes:

The engine speed signal from the engine speed sensor is very important for implementing several functions of the engine control unit. If the engine speed signal is not correct, some other functions may receive an incorrect signal, leading to incorrect operation.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

Ensure that the engine speed sensors are properly connected to the control unit.

Check the battery voltage.

EMS 4868

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

The signal from the engine speed sensor has strong interference.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a fault code 4872 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4869

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

The engine speed sensor indicates a too large increase in engine speed over the period between two consecutive pulses.

The reasons:

This fault may occur when the polarity of the two speed sensors is switched on.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a fault code 4872 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4870

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

The engine speed sensor indicates a too large decrease in engine speed over a period of time between two successive pulses.

The reasons:

Open circuit engine speed sensor.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a fault code 4872 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4871

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

The signal from the crankshaft speed sensor was wrong from the start.

The reasons:

The engine speed sensor produces an incorrect signal.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If DTC 4865 has been registered, and DTC 4881 is not, as long as the fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4872

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 1

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

If one of the engine speed sensors is faulty, the maximum torque of the engine is reduced by 30%.

Increased engine speed at idle will also be lower than usual.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4872

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed signals, sensor T74

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

The engine speed signal from the engine speed sensor is extremely important to many functions of the engine control unit. If the engine speed signal is incorrect, many other functions may receive an incorrect signal, resulting in improper operation.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

Check battery voltage.

EMS 4873

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed signals, sensor T74

Fault:

Malfunction of the engine speed sensor 1.

The reasons:

Unknown Malfunction.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

EMS 4881

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine Speed ??Sensor 2 Signals

Fault:

When the engine is running, the signals from the two speed sensors do not match. The fault code is triggered by sensor 2.

The reasons:

One possible malfunction may lie in the confusion in the wiring of speed sensors. The control unit cannot determine which sensor is to be used.

Notes:

While the malfunction code is present, the engine power is reduced.

Elimination:

Check engine speed sensors, electrical connectors and wiring.

Ensure that the engine speed sensors are properly connected to the control unit.

EMS 4881

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Crankshaft speed signals

Fault:

When the engine is running, the signals from the two speed sensors do not match.

The reasons:

If fault code 4881 was registered and fault code 4865 is not, this may be due to the fact that the electrical wiring going to one of the engine crankshaft speed sensors is confused. The control unit cannot determine which.

If, however, both fault code 4881 and fault code 4865 were registered, this may be due to the fact that the engine took a few turns in the opposite direction.

If, when you try to start the engine, fault codes 4881 and 4865 are generated, this may be due to the fact that the engine speed sensors were interchanged.

Notes:

If DTC 4881 was registered and DTC 4865 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

EMS 4882

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Crankshaft speed signals

Fault:

The signal level from the crankshaft speed sensor 2 is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The crankshaft speed signal from sensor 2 is too low, despite the fact that the maximum sensitivity of the control unit has been set.

The control unit may poorly read a signal with a low level, which will lead to an uneven operation of the engine or to stop it.

This malfunction will cause recording and other malfunction codes. Such codes can be disregarded until a low signal level is corrected.

Elimination:

Check the distance between the engine speed sensor and the flywheel; the distance must not exceed 1.5 mm.
Check sensors and wiring.

EMS 4882

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed signals, sensor T75

Fault:

The signal level from the crankshaft speed sensor 2 is lower than it should be for the current crankshaft speed.

The reasons:

A malfunction may be due to an excessively large distance between the engine speed sensor and the flywheel. In addition, it may be due to a problem in the wiring or connectors.

Notes:

The engine speed signal from the engine speed sensor is extremely important to many functions of the engine control unit. If the engine speed signal is incorrect, many other functions may receive an incorrect signal, resulting in improper operation.

Elimination:

Check the distance between the engine speed sensor and the flywheel. It should not exceed 1.5 mm.
Check the connectors and wiring.

Ensure that the engine speed sensors are properly connected to the control unit.

EMS 4883

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

Open circuit engine speed sensor. This DTC may occur when the engine is started at a very low temperature or

when the battery is low.

Notes:

If a malfunction code 4888 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4884

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

The engine speed determined by the signal from the speed sensor is below the set minimum value.

The reasons:

The signal from the engine speed sensor has strong interference.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code 4888 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4885

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

The engine speed sensor indicates a too large increase in engine speed over the period between two consecutive pulses.

The reasons:

This fault may occur when the polarity of the two speed sensors is switched on.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code 4888 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4886

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

The engine speed sensor indicates a too large decrease in engine speed over a period of time between two consecutive pulses.

The reasons:

Open circuit engine speed sensor.

This DTC may occur when the engine is started at a very low temperature or when the battery is low.

Notes:

If a malfunction code 4888 was generated at the same time, it is possible that the signal was absent for several engine revolutions, otherwise the malfunction is due to temporary noise.

If only one of the engine crankshaft speed sensors is faulty, while the malfunction is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4887

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

Engine speed sensor 2

The reasons:

The signal from the crankshaft speed sensor was wrong from the start.

Notes:

If DTC 4881 was registered and DTC 4865 is not, as long as a fault is present, the maximum engine torque is reduced by 30%. Increased engine speed at idle will also be lower than usual.

If both crankshaft speed sensors are faulty, the engine will shut down.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4888

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed sensor 2

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

If one of the engine speed sensors is faulty, the maximum torque of the engine is reduced by 30%.

Increased engine speed at idle will also be lower than usual.

Elimination:

Check sensors, connectors and wiring.

Check battery voltage

EMS 4888

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine Speed ??Sensor 2 Signals

Fault:

No signal from the speed sensor.

The reasons:

A malfunction code may appear due to the lack of connection of the speed sensor.

Notes:

The engine speed signal from the speed sensor is very important for implementing several functions of the engine control unit. If the crankshaft speed signal is not correct, some other functions may receive a wrong signal, leading to incorrect operation.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

Check the battery voltage.

EMS 4888

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed signals, sensor T75

Fault:

No signal from the crankshaft speed sensor.

The reasons:

A malfunction code may appear due to an unconnected crankshaft speed sensor.

Notes:

The engine speed signal from the engine speed sensor is extremely important to many functions of the engine control unit. If the engine speed signal is incorrect, many other functions may receive an incorrect signal, resulting in improper operation.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.
Check battery voltage.

EMS 4889

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed signals, sensor T75

Fault:

Malfunction of the sensor 2 engine speed.

The reasons:

The cause of the malfunction is an element having several faults at the same time.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

EMS 4889

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Engine Speed ??Sensor 2 Signals

Fault:

Malfunction of the sensor 2 engine speed.

The reasons:

Failure occurs due to the fact that several different faults occur simultaneously in an element.

Notes:

While the malfunction code is present, the engine power is reduced.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

EMS 4896

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Motor protection at startup

Fault:

The engine's rotational speed during start-up has exceeded the allowed value for a specified time interval (usually 1 second).

The reasons:

With the Scania Programmer, the function that limits the engine speed during start-up has been disabled. During start-up, the engine has exceeded the set speed.

Notes:

Immediately after starting the cold engine for a set time interval, the crankshaft speed is limited to 1000 rpm. This feature protects the engine from damage.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4897

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Motor protection at startup

Fault:

The engine speed during start-up has exceeded the allowed value for a set time interval (usually more than 1

second).

The reasons:

During start-up, the engine has exceeded the set speed.

Notes:

Function and fault codes are for informational purposes only. Using the Scania Programmer used during maintenance, the engine speed limitation function can be disabled at start-up.

Elimination:

As long as there is a malfunction, no action is required. If possible, the function should be activated.

EMS 4912

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine speed signals, sensor T75

Fault:

The engine speed sensor generates a signal with disturbances. The sensor signal pulsates outside the expected range.

The reasons:

A malfunction code may occur when starting the engine in very cold weather or when the battery is discharged.

Notes:

The engine speed signal from the engine speed sensor is extremely important to many functions of the engine control unit. If the engine speed signal is incorrect, many other functions may receive an incorrect signal, resulting in improper operation.

Elimination:

Check that the engine speed sensor is installed correctly. Also check the connectors and wiring.

Check battery voltage.

EMS 4912

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed

Fault:

The crankshaft speed for some period exceeded the permissible value.

The reasons:

This malfunction may be caused by difficult gear changes or fuel ingress into the oil.

Notes:

The engine retarder was activated to reduce the engine speed. With this fault, the maximum torque of the engine is reduced by 30%. Increased engine speed at idle will also be lower than usual.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds. Check for fuel leaks.

EMS 4913

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine speed

Fault:

The crankshaft speed for some period exceeded the permissible value.

The reasons:

This DTC may be due to poor gear changes, but it may also be due to the retarder motor brakes.

Notes:

The engine retarder was activated to reduce the engine speed. Check whether DTC 4912 is generated at the same time.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 4928

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Crankshaft speed signals

Fault:

No signals from both crankshaft speed sensors.

The reasons:

A fault code can be set if the speed sensors are not connected at all, or both speed sensors are faulty.

The DTC can be set at start-up with a discharged battery.

Also, this fault may occur if the starter is not connected to the control unit, or if the output signal of the control unit for the starter is incorrect.

Notes:

Shutting off the fuel in the absence of a signal from one of the engine speed sensors.

Elimination:

If the engine crankshaft rotates when the starter is activated, check the speed sensors, connectors and wiring.

If the engine crankshaft does not rotate when the starter is activated, check the proper performance of the latter.

EMS 4928

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 1

Fault:

Short circuit of the ignition coil on the + battery.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4929

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 1

Fault:

Short of ignition coil to ground.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4930

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 1

Fault:

An open in the electrical circuit of the ignition coil.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4931

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 2

Fault:

Short circuit of the ignition coil on the + battery.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4932

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 2

Fault:

Short of ignition coil to ground.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4933

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 2

Fault:

An open in the electrical circuit of the ignition coil.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4934

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 3

Fault:

Short circuit of the ignition coil on the + battery.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be

no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4935

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 3

Fault:

Short of ignition coil to ground.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4936

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 3

Fault:

An open in the electrical circuit of the ignition coil.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4937

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 4

Fault:

Short circuit of the ignition coil on the + battery.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4938

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 4

Fault:

Short of ignition coil to ground.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4939

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 4

Fault:

An open in the electrical circuit of the ignition coil.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4940

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 5

Fault:

Short circuit of the ignition coil on the + battery.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4941

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 5

Fault:

Short of ignition coil to ground.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 4942

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Ignition coil, cylinder 5

Fault:

An open in the electrical circuit of the ignition coil.

The reasons:

Malfunctioning wiring or connectors.

Notes:

Engine misfire occurs. Uneven engine performance and limited torque.

Elimination:

Check wiring and connectors. Check the spark.

Carefully check the connection to the ME7 control unit and the connection to the engine ground. There should be no traces of corrosion.

After completing the action, let the engine run at a speed of at least 1600 rpm to remove the DTC.

EMS 5120

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR valve with a pneumatic cylinder control

Fault:

When an EGR valve receives a request to go to the closed position, the EGR valve position sensor T124 indicates an open position (> 8%) affecting engine performance (power and emissions).

The reasons:

The EGR valve could not close completely.

Spring return fault on the EGR valve control cylinder.

A problem with the operation of the valve block, V107.

The EGR Position Sensor T124 is faulty or disconnected from the circuit.

Notes:

After starting the engine, the engine control unit performs an active check on the EGR valve if the following conditions are met:

The engine runs at idle.

Engine temperature above 60 ° C.

There is no request to turn on the EGR system (0%).

Motor brake is not included.

EGR has been adapted.

The air pressure in the parking brake circuit is at a normal level (above 7.5 bar).

In the case of a DTC, the EGR system remains active and the engine power does not decrease.

A fault code can be cleared even if it is active.

Elimination:

Check:

EGR valve control cylinder by activating the EGR valve using SDP3. Set the set point to 0% and make sure that the EGR position sensor T124 reports a position close to zero. If an EGR adaptation was performed, the position should be below 1%. If the position does not fall below 8%, a fault code is generated. If the position is close to 8% or above this value, this is the cause of the DTC.

EGR valve control cylinder, connectors and wiring to EGR valve position sensor circuit T124.

Functioning valve block V107.

If the EGR valve position sensor T124 is faulty or disconnected from the circuit.

After replacing the control cylinder, EGR valve, or T124 EGR valve position sensor, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 5122

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mass Flow Calibration

Fault:

During the calibration of the mass flow sensor, the minimum acceptable value was obtained.

The reasons:

Possible causes of the DTC may be as follows:

Incorrect mass flow sensor, boost pressure sensor, or air temperature sensor in the intake manifold.

Leaks in the EGR system or in the intake tract after the turbocharger.

If the engine is not gaining momentum well, then a pressure sensor is likely to malfunction.

Notes:

The engine control unit switches off the exhaust gas recirculation system.

Elimination:

Check sensors and wiring.

Check for leaks in the EGR system or in the charge-air system.

After the repair work with SDP3, it is necessary to restore the original parameters of the EGR system in the memory of the control unit.

EMS 5123

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mass Flow Calibration

Fault:

During the calibration of the mass flow sensor, the maximum allowable value was obtained.

The reasons:

Possible causes of the DTC may be as follows:

Incorrect mass flow sensor, boost pressure sensor, or air temperature sensor in the intake manifold.

Leaks in the EGR system or in the intake tract after the turbocharger.

If the engine is not gaining momentum well, then a pressure sensor is likely to malfunction.

Notes:

The engine control unit switches off the exhaust gas recirculation system.

Elimination:

Check sensors and wiring.

Check for leaks in the EGR system or in the charge-air system.

After the repair work with SDP3, it is necessary to restore the original parameters of the EGR system in the memory of the control unit.

EMS 5124

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Diffuser

Fault:

Diffuser can not be properly controlled.

The reasons:

Jamming in the diffuser due to mechanical failure or due to insufficient pressure in the cavity of the executive cylinder. This can also be due to a blockage in the pressure relief valve channel in the valve block.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

If the diffuser remains in the closed position, then at high loads and high speeds, the resistance of the diffuser increases significantly. As a result, the boost pressure and engine power will decrease, and black smoke may appear in the exhaust gases.

Elimination:

Check diffuser and actuator cylinder.

Check the tightness of the on-off valve.
Check for pressure relief through the valve block.

EMS 5125

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mass Flow Calibration

Fault:

Mass flow meter calibration disabled.

The reasons:

This DTC was recorded due to a fault in the EGR system during the current operating cycle (that is, since the on-board voltage was turned on). In this case, the sensor calibration is disabled.

Notes:

Mass flow meter calibration disabled. The malfunction code is automatically cleared when the ignition key supplies voltage.

Elimination:

Check other EGR codes (active and inactive). Turn on and off the onboard power supply with the ignition key.

EMS 5126

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR

Fault:

The engine control unit has turned off the exhaust gas recirculation system.

The reasons:

The EGR system is disabled due to a system malfunction during the current cycle of operation (that is, since the on-board voltage is turned on).

Notes:

The engine control unit switches off the exhaust gas recirculation system. The malfunction code is automatically cleared when the ignition key supplies voltage.

Elimination:

Check other EGR codes (active and inactive). Turn on and off the onboard power supply with the ignition key.

EMS 5127

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR composition

Fault:

Exhaust gas recirculated too little; It is not possible to increase the amount of recycled exhaust gas to a fixed level.

The reasons:

Possible causes of the DTC may be as follows:

The EGR valve shut-off element does not open. This can be caused by sticking of the valve itself, insufficient pressure of compressed air supplied to the executive cylinder or leakage of compressed air from the executive cylinder.

Track valve may be faulty.

The movable element of the diffuser stuck in the open position.

EGR gas leakage.

The mass flow sensor may indicate a too high value, as a result forcing the engine control unit to conclude that the engine is receiving too few EGR gases.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the throttle in the EGR valve, control cylinder and follow valve by activating the elements with SDP3.

Check wedge diffuser.

Check for leaks in the EGR system.

Check the air flow sensor.

After elimination of malfunction with the help of SDP3, it is necessary to restore the initial parameters of the EGR system in the control unit.

Continue as follows to ensure that the problem is resolved:

Drive the car for at least 10 minutes to get the EGR system running. The EGR system must be running so that the control unit can verify the repair.

If the fault is resolved, the fault code becomes inactive. In this case, delete the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 5129

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR cooler

Fault:

No description

The reasons:

The EGR cooler is locked.

Notes:

The engine control unit reduces the amount of EGR gases.

Elimination:

Remove and clean the EGR cooler.

EMS 5138

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Back pressure in exhaust system

Fault:

The back pressure in the exhaust system is too high when the engine brake is applied.

The reasons:

The exhaust manifold is plugged or the engine retarder damper is faulty, for example, it is stuck in the maximum braking position. A malfunction may also be the result of a malfunction in the backpressure sensor in the exhaust system or in the atmospheric pressure sensor.

Notes:

The check is performed only during operation of the engine brake. The engine brake works with increased braking force. This fault may cause engine damage.

Elimination:

Check the proper operation of the follower valve.

Check the engine brake valve for binding.

Check back pressure sensor in exhaust system and atmospheric pressure sensor, as well as their electrical connectors and wiring.

EMS 5139

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Back pressure in exhaust system

Fault:

The back pressure in the exhaust system is too high when the fuel supply is turned off.

The reasons:

The exhaust system is blocked or the engine retarder damper is faulty, such as stuck in the closed position. A malfunction may also be the result of a malfunction in the backpressure sensor in the exhaust system or in the atmospheric pressure sensor.

Notes:

Perform this check only when the fuel supply is turned off and the engine retarder is not activated. The engine brake moderator helps to increase braking force. This fault may cause engine damage.

Elimination:

Make sure that the engine brake retarder valve is not stuck in the closed position and the exhaust system is not blocked.

Check back pressure sensor in exhaust system and atmospheric pressure sensor.

Check the connectors and wiring.

EMS 5140

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Back pressure in exhaust system

Fault:

The back pressure in the exhaust system is too high when the fuel supply is normal.

The reasons:

The variable nozzle of the turbocharger with variable geometry stuck in the closed position. A malfunction may also be the result of a malfunction in the backpressure sensor in the exhaust system or in the atmospheric pressure sensor.

Notes:

Perform this check only when the fuel supply is normal.

Engine torque is reduced to prevent engine damage.

The engine brake moderator helps to increase braking force. This fault may cause engine damage.

Elimination:

Perform a lag check for a variable geometry turbocharger to ensure that the annular nozzle is stuck in the closed position.

Make sure the EGR valve and the EGR cooler are not blocked. Make sure that in the turbocharger the compressor shaft and the wheel of the turbine wheel rotate with the creation of proper friction.

Check back pressure sensor in exhaust system and atmospheric pressure sensor.

Check the connectors and wiring.

EMS 5141

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Back pressure in exhaust system

Fault:

The back pressure in the exhaust system is too low when the engine brake is applied.

The reasons:

Leakage in the exhaust manifold. Leaks in the engine brake valve or in the EGR valve or in the connections between the cylinder block and the engine brake valve and the EGR valve.

Notes:

The engine brake works with reduced braking force.

Elimination:

Check:

for leaks in the exhaust manifold

EGR valve for leaks using the EGR check for leaks

work of the watching valve and valve of the motor brake

back pressure sensor in exhaust system and atmospheric pressure sensor

electrical connectors and wiring

EMS 5142

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Back pressure in exhaust system

Fault:

One or more faults in the backpressure sensor in the exhaust system.

The reasons:

In the back pressure sensor in the exhaust system, several faults may occur.

The DTC may also be caused by a fault in the atmospheric pressure sensor.

Notes:

The engine brake does not develop proper braking force.

Elimination:

Check:

no leaks in exhaust manifold

the operation of the follower valve and valve motor retarder.

back pressure sensor in exhaust system and atmospheric pressure sensor

electrical connectors and wiring

EMS 5145

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Atmosphere pressure

Fault:

The atmospheric pressure sensor is generating an incorrect signal.

The reasons:

Atmospheric pressure sensor defective.

Notes:

Depending on the vehicle configuration, a reduction in torque is possible.

Elimination:

The atmospheric pressure sensor is built into the optional gas engine control unit; its separate replacement is not allowed.

EMS 5152

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Pressure sensor charge air.

Fault:

The value of the charge air pressure sensor is outside the acceptable range.

The reasons:

The value of the charge air pressure sensor is too high or too low compared to signals from other pressure sensors.

Possible reasons:

Faulty charge air pressure sensor connector.

The electrical wires of the charge air pressure sensor are faulty.

Notes:

The amount of fuel cannot be adjusted correctly.

This may adversely affect engine performance.

Elimination:

Compare the values ??from the charge air pressure sensor, atmospheric pressure sensor and backpressure sensor in the exhaust system with the ignition on without starting the engine (power is supplied via terminal U15). All sensors must display atmospheric pressure.

Replace the charge air pressure sensor if its reading deviates from other sensors by more than 0.35 bar.

Verify that the repair was successful as follows:

Run the engine until it reaches normal operating temperature.

Turn off the engine, but leave the ignition key in the powering position via terminal U15.

Wait 30 seconds and verify that the DTC has been deactivated.

EMS 5153

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Backpressure sensor in exhaust system

Fault:

The value of the backpressure sensor in the exhaust system is outside the acceptable range.

The reasons:

The value from the pressure sensor in the exhaust manifold is too low compared to the values ??from other sensors.

Possible reasons:

Defective counter pressure sensor connector in the exhaust system.

Defective back pressure sensor wires in exhaust system.

Notes:

The amount of fuel cannot be adjusted correctly.

This may adversely affect engine performance.

Elimination:

Compare the values ??from the charge air pressure sensor, atmospheric pressure sensor and backpressure sensor in the exhaust system with the ignition on without starting the engine (power is supplied via terminal U15). All sensors must display atmospheric pressure.

Replace the backpressure sensor in the exhaust system, if its reading is more than 0.35 bar deviating from that of the other sensors.

Verify that the repair was successful as follows:

Run the engine until it reaches normal operating temperature.

Turn off the engine, but leave the ignition key in the powering position via terminal U15.

Wait 30 seconds and verify that the DTC has been deactivated.

EMS 5154

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Air filter

Fault:

Air pressure after the filter is too low.

The reasons:

Air filter clogged.

Notes:

The air filter warning light comes on. Leads to increased fuel consumption, degradation and black smoke.

May damage the turbocharger.

Elimination:

Replace the air filter.

EMS 5155

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Sensor air filter.

Fault:

The air filter sensor generates a signal voltage that is too high.

The reasons:

Malfunction of the T157 air filter sensor, its wiring or connector.

Notes:

The engine warning light comes on.

Air filter monitoring is deactivated.

Elimination:

Check T157 air filter sensor, wiring harness and connector.

EMS 5156

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EGR valve

Fault:

The EGR valve reacts too slowly when closing.

The reasons:

Malfunction of the tracking valve V107 or EGR valve.

Notes:

Engine performance is deteriorating. Increased release of soot particles; smoke may be present.

Elimination:

Using SDP3, check the function of the EGR valve. Make sure the valve moves gently. Check wiring and connectors.

After replacing the control cylinder, EGR valve, or position sensor T124, be sure to perform basic setup and adaptation of the EGR system using SDP3.

EMS 5157

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbine Bypass Valve

Fault:

Short circuit to + battery or ground or open circuit of the servo valve controlling the turbine bypass valve.

The reasons:

Electrical wiring or monitor follower connector is damaged or not connected.

Notes:

A fault code can only be deleted when it is inactive.

Elimination:

Check the follow valve, wiring and connector.

EMS 5158

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbine Bypass Valve

Fault:

Short circuit to + battery tracking valve control valve bypass the turbine.

The reasons:

Short to + pin 8 battery in connector A3.

Notes:

A fault code can only be deleted when it is inactive.

Elimination:

Check the follow valve, wiring and connector.

EMS 5168

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The temperature is lower than expected by the control unit.

The reasons:

Defective exhaust gas temperature sensor in front of the SCR catalytic converter.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

Faults lead to a lack of reagent supply or the addition of a very small amount of reagent.

Elimination:

Check exhaust gas temperature sensor and wiring.

Check exhaust system.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 5169

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The temperature is higher than expected by the control unit.

The reasons:

Defective exhaust gas temperature sensor in front of the SCR catalytic converter.

In addition, a malfunction may occur if the design of the exhaust system has been changed.

Notes:

As a result of this fault, too much reagent is added. This means that the unused reagent will pass through the SCR catalytic converter.

Elimination:

Check exhaust gas temperature sensor and wiring.

Check exhaust system.

EMS 5170

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

Invalid signal from the sensor. The constant value of the signal.

The reasons:

The temperature sensor in front of the catalytic converter SCR is faulty.

Notes:

Faults lead to a lack of reagent supply or the addition of a very small amount of reagent.

Elimination:

Check exhaust gas temperature sensor and wiring.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 5171

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

An improbable signal from an exhaust gas temperature sensor mounted on an SCR catalytic converter.

The reasons:

The exhaust gas temperature sensor gives an incorrect indication. The sensor is most likely to show a lower temperature than is typical for the respective operating conditions. In addition, this malfunction may occur if the

design of the exhaust pipe has been changed.

Notes:

Reagent injection does not work properly when this DTC is activated.

Elimination:

Check for signal from the sensor.

Check exhaust system.

Cars with NOx control

This DTC will reduce torque on vehicles with control over NOx emissions.

This fault code can be made inactive by traveling on a vehicle if the fault has been rectified.

EMS 5376

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

Short circuit on the “+” battery of one of the sensors with common power. This may be one of the following sensors: Oil pressure sensor, mass flow sensor for exhaust gases or fuel temperature sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 5377

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is below the set value.

The reasons:

Short circuit to ground of one of the sensors with common power. This may be one of the following sensors: Oil pressure sensor, mass flow sensor for exhaust gases or fuel temperature sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 5380

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbocharger, speed sensor 1

Fault:

Invalid speed value. The value is lower than expected.

The reasons:

Malfunction in the turbine speed sensor.

Malfunction of one of the other sensors related to the calculation of the engine load: charge air pressure sensor, mass flow sensor, charge air temperature sensor.

Notes:

No description

Elimination:

Check the turbine speed sensor, wiring harnesses and electrical connector.

Check the charge air pressure sensor, mass flow sensor, charge air temperature sensor.

EMS 5381

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, speed sensor 1

Fault:

Turbine speed too high.

The reasons:

There may be a malfunction in the turbocharger speed sensor.
The engine must produce too high a turbine speed.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

Check the turbocharger speed sensor, electrical connectors and wiring.

Check the mass flow sensor, charge air pressure sensor, charge air temperature sensor and atmospheric pressure sensor.

Be sure to perform the basic adjustment of the mass flow sensor adaptation values ??after replacing the mass flow sensor or after repairing a leak in the engine intake system.

EMS 5382

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Turbocharger, speed sensor 1

Fault:

Invalid speed value. Value is higher than expected.

The reasons:

Malfunction in the turbine speed sensor.

Malfunction of one of the other sensors related to the calculation of the engine load: charge air pressure sensor, mass flow sensor, charge air temperature sensor.

Air filter or intercooler closure. Leak in the intake system.

The throttle valve does not open.

Notes:

No description

Elimination:

Check the turbine speed sensor, wiring harnesses and electrical connector.

Check the charge air pressure sensor, mass flow sensor, charge air temperature sensor.

Check the air filter, intercooler and throttle valve.

Check the intake system for leaks.

EMS 5383

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Supply voltage 1, engine control unit

Fault:

The power supply to the engine control unit was below acceptable levels.

The reasons:

The engine control unit has two parallel circuits for supplying voltage. A single-circuit voltage supply was insufficient, which could be due to a faulty fuse or a damaged electrical wiring harness.

Notes:

If the fuse is OK, the system is operating normally, but a fault code is generated. If the fuses of both circuits are faulty, the engine control unit does not receive voltage and the engine stalls.

Elimination:

Check the engine power supply fuses. Replace fuses if necessary. If the fault persists, check the wiring and connectors.

EMS 5385

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Power supply 2, engine control unit

Fault:

The power supply to the engine control unit was below acceptable levels.

The reasons:

The engine control unit has two parallel circuits for supplying voltage. A single-circuit voltage supply was insufficient, which could be due to a faulty fuse or a damaged electrical wiring harness.

Notes:

If the fuse is OK, the system is operating normally, but a fault code is generated. If the fuses of both circuits are faulty, the engine control unit does not receive voltage and the engine stalls.

Elimination:

Check the engine power supply fuses. Replace fuses if necessary. If the fault persists, check the wiring and connectors.

EMS 5392

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

One of the common-power sensors has a short to battery. This may be one of the following sensors: Coolant temperature sensor, charge air temperature sensor, charge air pressure sensor, fuel line pressure sensor, or fan speed sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 5393

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is below the set value.

The reasons:

One of the sensors with a common power supply has a short circuit between the power supply circuit of the sensor and the mass point of the sensor. This may be one of the following sensors: Coolant temperature sensor, charge air temperature sensor, charge air pressure sensor, fuel line pressure sensor, or fan speed sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 5408

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200, 2098547, 2098546, 2098545, 2096902, 2096901

Title:

Oil pressure sensor

Fault:

The signal of the oil pressure sensor in the engine lubrication system exceeds the normal value. This means that the oil pressure, measured at a certain speed, is higher than normal.

The reasons:

The fault may be either electrical or mechanical.

Electrical faults may be caused by a sensor or wiring fault.

Mechanical faults that can lead to high oil pressure is a malfunction in the oil pump, safety valve or piston cooling valve.

In addition, a malfunction may be caused by a blockage of the oil filter, a blockage of the lubrication system, or an incorrect viscosity of the oil.

Due to the fact that the oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply, the fault can also be caused by a fault in the electrical circuits of the fuel temperature sensor or mass flow sensor.

Notes:

No description

Elimination:

Check oil level and oil filter.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

Check the oil and other elements in the lubrication system.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. To allow the control unit to check the DTC, the coolant temperature must be in the range of 70 – 90 ° C, and the engine speed must be in the range of 500 – 2400 rpm. To see if the above conditions are satisfied, you can use the DTC function.

EMS 5409

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil pressure sensor

Fault:

The signal from the oil pressure sensor in the engine lubrication system is below the normal value. This means that the oil pressure, measured at a certain speed, is lower than normal.

The reasons:

The fault may be either electrical or mechanical.

Electrical faults can be caused by faulty sensors, electrical connectors, or electrical wiring.

Mechanical faults that can lead to low oil pressure are faults in the oil pump, safety valve or piston cooling valve.

In addition, a malfunction may be caused by leaks in the lubrication system, a blockage of the oil filter or suction pipe, the presence of fuel in the oil, a low oil level, or improper viscosity of the oil.

Notes:

Excessively low oil pressure can adversely affect many engine components and cause damage to them.

Elimination:

Check oil level and oil filter.

Check other parts of the lubrication system.

Ensure that the oil pressure sensor shows the correct value.

EMS 5409

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Oil pressure sensor

Fault:

The signal from the oil pressure sensor in the engine lubrication system is below the normal value. This means that the oil pressure, measured at a certain speed, is lower than normal.

The reasons:

The fault may be either electrical or mechanical.

Electrical faults may be caused by a sensor or wiring fault.

Mechanical faults that can lead to low oil pressure are faults in the oil pump, safety valve or piston cooling valve.

In addition, a malfunction may be caused by leaks in the lubrication system, a blockage of the oil filter or suction nozzle, the presence of fuel in the oil, a low oil level or improper viscosity of the oil.

Due to the fact that the oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply, the fault can also be caused by a fault in the electrical circuits of the fuel temperature sensor or mass flow sensor.

Notes:

No description

Elimination:

Check oil level and oil filter.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

Check the oil and other elements in the lubrication system.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on

the malfunction code monitoring function and view the malfunction code. To allow the control unit to check the DTC, the coolant temperature must be in the range of 70 – 90 ° C, and the engine speed must be in the range of 500 – 2400 rpm. To see if the above conditions are satisfied, you can use the DTC function.

EMS 5456

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Accelerator pedal position sensor, downshift signal (“kick-down”)

Fault:

The signal from the accelerator pedal is missing or incorrect.

The reasons:

Failure CAN signal or a signal failure “kickdown” of the accelerator pedal

Notes:

Activated increased idling speed.

Elimination:

Check for the presence of the coordinator generated by the fault codes that relate to the position of the accelerator pedal.

EMS 5476

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

Battery voltage was below acceptable value. It was 9 volts or less for 0.5 seconds.

The reasons:

The fault may occur during a cold start, if the battery is in poor condition.

Notes:

Under reduced voltage can be observed difficult start the engine.

Elimination:

Check the battery and alternator.
Check the connectors and wiring.

EMS 5477

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value.

The reasons:

This may be caused by the work start-charger.

Notes:

The engine is controlled and safely shut down.

Elimination:

Check the battery and alternator.
Check the connectors and wiring.

EMS 5479

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Atmospheric pressure sensor

Fault:

The atmospheric pressure sensor outputs a value that is higher or lower than expected. Differences in values issued by the atmospheric pressure sensor, a pressure in the exhaust system and a charge air pressure sensor, is too large.

The reasons:

The atmospheric pressure sensor may be dirty or defective and thus indicates an incorrect value.

Notes:

The engine control unit cannot compensate for differences in atmospheric pressure. As long as the fault code is present, the engine power can be reduced.

Elimination:

Check the atmospheric pressure sensor, connectors and wiring.

The engine is off, the voltage is turned on by the ignition key.

Ensure that the atmospheric pressure sensor, backpressure sensor in the exhaust system and the charge air pressure sensor are the same. Otherwise, replace the sensor.

Deactivate the trouble code by warming up the engine. Turn off the engine and turn on the power. Start the engine. The DTC will deactivate within 30 seconds.

EMS 5632

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coil Electromagnetic Clutch Air Conditioning Compressor

Fault:

Malfunction in the air conditioning compressor.

The reasons:

The coil winding may be faulty or limited in operability. An open circuit in the wiring or connectors.

Notes:

The air conditioning system does not work.

Elimination:

Follow the general procedure for troubleshooting the air conditioning system, for example, in the coil winding and in its wiring.

EMS 5633

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Additional cooler fan

Fault:

Malfunction in the fan for additional cooler.

The reasons:

The solenoid valve may be faulty or limited in operability. An open circuit in the wiring or connectors.

Notes:

The additional cooler fan is not working satisfactorily.

Elimination:

Follow the general troubleshooting procedure for the optional cooler fan, for example, in a solenoid valve and its wiring.

EMS 5634

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Fan control

Fault:

Faulty fan.

The reasons:

The solenoid valve may be faulty or limited in operability. An open circuit in the wiring or connectors. In addition, it may be that in the element at the same time manifest several different faults.

Notes:

The fan does not work satisfactorily.

Elimination:

Perform a general procedure for troubleshooting a fan, for example, in a solenoid valve and its wiring.

EMS 5635

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Radiator fan clutch unit

Fault:

The fan speed of the radiator deviates from the value requested by the control unit.

The reasons:

Incorrect fan clutch.

Too little or no oil in the fan clutch.

The viscosity of the oil contained in the fan clutch has been changed.

Notes:

Fan clutch does not work properly and therefore cooling performance is reduced. It will not be possible to drive with high power output for extended periods of time.

Elimination:

Check fan clutch.

When manually turning the fan, a certain resistance should be felt. If the fan can be turned without resistance, the fan clutch is faulty.

Also check the fan clutch for oil leaks. An oil leak from the fan clutch indicates that it is faulty.

EMS 5636

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Hardware check

Fault:

Malfunction in the electrical circuit to check the hardware.

The reasons:

A hardware check indicates a malfunction with regard to the stated specifications.

Notes:

Battery pressure may be difficult to verify.

The engine is off and it will not be possible to start it until the DTC is cleared.

Elimination:

Clear the fault code. Restart the engine control unit by turning the ignition on with the ignition key. Wait a minute and turn off the ignition with the key.

Clear trouble codes. Turn off the ignition and wait one minute. Turn the ignition ON and verify that the DTCs are cleared.

If the DTC becomes active again, replace the engine control unit.

EMS 5637

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine management system

Fault:

The control unit has lost data or detected a malfunction in the system memory.

The reasons:

Possible reasons:

A new software was programmed into the engine management system just before the relevant data was saved.
A malfunction has occurred in the system data memory.

Notes:

The system is unreliable.

Elimination:

Clear the fault code. Restart the engine control unit by turning off the ignition with the ignition key. Wait a minute and turn on the ignition with the key.
Allow the engine to run for approximately 10 minutes. If the DTC appears again, replace the engine control unit.

EMS 5638

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

The engine control unit

Fault:

Fault memory engine control unit.

The reasons:

Faulty control unit or software changed.

Notes:

While there is a malfunction, the engine only works with increased idling speed.

Elimination:

Clear the fault code. Restart the engine control unit by turning off the ignition with the ignition key. Wait a minute and turn on the ignition with the key.
Allow the engine to run for approximately 10 minutes. If the DTC appears again, replace the engine control unit.

EMS 5639

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

The engine control unit

Fault:

Failure of the control unit.

The reasons:

The engine control unit is faulty or has been exposed to an electromagnetic field (EMC).

Notes:

While there is a fault, the car cannot start moving. The control system shuts off the fuel supply to the injectors.

Elimination:

Clear the fault memory and turn off the ignition with the ignition key.

Wait one minute.

Turn on the ignition with the ignition key.

Repeat this five times. Replace the control unit if this DTC is generated again.

EMS 5640

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EOL data

Fault:

Vehicle data is lost.

The reasons:

This may be due to reprogramming the engine control unit using new software immediately before storing the relevant data or a malfunction in the system data memory.

Notes:

While there is a malfunction, the engine only works with increased idling speed.

Elimination:

Install the correct software in the engine control unit. Erase the DTC and turn off the ignition with the ignition key. Wait a minute and turn on the ignition with the key.

EMS 5641

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Error code

Fault:

Nozzle settings were lost from the block memory.

The reasons:

This may be due to reprogramming the engine control unit using new software immediately before storing the relevant data or a malfunction in the system data memory.

Notes:

As long as the DTC is present, the engine power is reduced.

Elimination:

The engine control unit must be reprogrammed.

EMS 5642

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Software Verification

Fault:

The engine control unit received an internal fault message.

The reasons:

For information about the current software version, refer to the technical information (TI).

Notes:

No description

Elimination:

For information about the current software version, refer to the technical information (TI).

EMS 5643

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Generator 2

Fault:

Failure in alternator charge power 2.

The reasons:

Short circuit or open circuit generator.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

The EGR system is turned off. In accordance with current legal requirements, engine power is reduced on vehicles that are equipped with NOx exhaust control.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5644

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter control

Fault:

Starter malfunction.

The reasons:

A possible cause may be a malfunction in the starter or an element in which there are several different malfunctions at the same time.

Notes:

Starter is unreliable.

Elimination:

Perform a general procedure for troubleshooting a starter, such as a starter relay and its wiring.

EMS 5645

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter control

Fault:

Inadvertent inclusion of a starter.

The reasons:

Incorrect inside information in engine control unit.

Notes:

When the starter is activated while the engine is running, abnormal noise coming from the engine can be heard.

The starter is activated when the engine is off.

Elimination:

Move the mode selector to neutral.

Erase the DTC and turn off the ignition with the ignition key. Wait a minute and turn on the ignition with the key. Repeat this five times and make sure that the starter is not activated.

Start the engine. If the starter does not work satisfactorily, it should be checked.

Allow the engine to idle for approximately 10 minutes. If this DTC is generated again, a short to ground may be the cause. If this is the case, check the connectors and wiring.

If there is no fault in the connectors and wiring: Replace the engine control unit and perform the test again.

EMS 5647

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

The engine control unit

Fault:

Failure of the control unit.

The reasons:

The engine control unit is faulty or has been exposed to an electromagnetic field (EMC).

Notes:

While there is a fault, the car cannot start moving. The control system shuts off the fuel supply to the injectors.

Elimination:

Clear the memory of the trouble codes and:
turn off the ignition using the ignition key
wait one minute

Switch on the ignition with the ignition key.
repeat five times. If this DTC is generated again, replace the control unit.

EMS 5648

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

The engine control unit

Fault:

Internal malfunction of the engine control unit.

The reasons:

It may be due to malfunctioning equipment or unauthorized modification of the software.

Notes:

No description

Elimination:

Clear the fault memory and turn off the ignition with the ignition key. Start the engine and let it run for 10 minutes. If the fault code reappears, the control unit should be reprogrammed or, as a last resort, replaced.

EMS 5648

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5649

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5650

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5651

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Engine management system configuration

Fault:

The engine management system receives from the OPC a signal that the vehicle has an automatic clutch, although the configuration of the engine management system has not been properly configured.

The reasons:

Engine management system configuration is incorrect.

Notes:

A request for an emergency stop from OCR will not work.

Elimination:

If necessary, contact Helpdesk for the correct SOPS file.

EMS 5652

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

This DTC will also generate DTC 5656.

Elimination:

Use SDP3 to restore the original values of the configuration parameters to the control unit. Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on again. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5653

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

This DTC will also generate DTC 5656.

Elimination:

Clear the trouble code memory. Turn on and off the onboard power supply with the ignition key. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5654

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5655

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5656

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed). During the entire time interval when the detected fault appears, the following functions are disabled:

Engine power takeoff

Clutch protection

Engine torque limit on some gears

Vehicle mass rating

Cruise control and cruise control will operate with a noticeable delay.

The engine fan speed control system will operate abnormally.

Elimination:

Use SDP3 to restore the original values ??of the configuration parameters to the control unit. Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on again. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5657

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

System shutdown

Fault:

Incorrect procedure to turn off the engine control unit. Power line 30 was disconnected from the control unit earlier than line 15, that is, the power from the battery was interrupted before the ignition was turned off.

The reasons:

The power to the engine control unit was turned off prematurely.

This could be due to an incorrect engine stopping procedure with the ignition key or the engine being stopped using the ground switch.

The supply voltage can be interrupted if additional equipment is connected to the consumer.

Notes:

When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

If the car is equipped with the SCR system, then at a stop, the system hoses are cleaned. It is important that the SCR system can be stopped without interrupting the power supply. Otherwise, the SCR system may be damaged:

the reducing agent in the hoses will freeze and the nozzles will be clogged.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

This fault also leads to a longer engine start.

It is assumed that the malfunction is resolved as soon as the engine control unit successfully completes a kill test.

An active DTC cannot be cleared until successful testing in the kill mode.

Elimination:

Always turn off the engine with the ignition key.

If the car has an SCR system, the main battery switch should not be turned off until at least 1.5 minutes have passed after turning off the key.

Make sure that there is no additional equipment that interferes with the power supply.

EMS 5658

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Data transfer to the control unit has been interrupted.

The reasons:

This malfunction may occur if the control unit supply voltage is too low or if the control unit itself malfunctions. If the car has a battery mass switch in the cab (used in buses and ADR cars), a fault code can be generated if the battery mass switch is used immediately after the ignition is turned off.

Notes:

A malfunction code may lead to a longer engine start.

This DTC may also generate DTC 65527.

Elimination:

Check the battery and alternator.

Clear the memory of trouble codes, and then turn off and turn on the ignition with the key.

If this DTC is generated again, replace the control unit.

EMS 5659

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

A malfunction code may lead to a longer engine start.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 5660

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

If several fault codes are stored in the memory at once, then you should check whether this trouble code has also been recorded in the memory. As a result of this fault, the control unit cannot convert signals from pressure and temperature sensors, as well as other sensors, as a result of which fault codes of all these elements are recorded.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

Elimination:

If this DTC has been recorded into the memory of the control unit only once, erase the DTC from the memory, then turn off the ignition with the ignition key and then turn it on again. If this DTC is generated again, replace the control unit.

If this DTC has been generated several times, replace the control unit.

EMS 5661

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

If several fault codes are stored in the memory at once, then you should check whether this trouble code has also been recorded in the memory. As a result of this fault, the control unit cannot convert the signals from the pressure and temperature sensors and the battery voltage, as well as the signals from other sensors, as a result of which the fault codes for all these elements are recorded.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

If the fault code was generated only once. Clear the memory of trouble codes, and then turn off and turn on the ignition with the key. If this DTC is generated again, replace the control unit.

If this DTC has been generated several times, replace the control unit.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 5662

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

The engine control unit shuts off the fuel supply to the engine using solenoid valves. As a result, it is difficult to start the engine (the engine may not start at all).

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 5663

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit. A malfunction code can be generated by generating one of malfunction codes 1376, 5680-5686, 58880, or 58881.

This DTC will also generate DTC 5665.

Notes:

While there is a malfunction, the engine control unit shuts off the fuel supply using solenoid valves. This often leads to short-term disruptions of the engine or, when the malfunction is present for a long period of time, to stop the engine.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5664

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

The cause of the malfunction may be:

Internal malfunction in the control unit.

When starting, terminal U15 (ignition voltage) has an external current consumer.

Power supply via terminal U15 from the control unit when disconnected, or through additional equipment or another control unit.

Notes:

Depending on the fault described above, the following will occur:

If a fault code is stored in memory, the engine control unit, despite repeated attempts, cannot turn off the EGR system.

Starting the control unit takes considerable time.

If a fault code is stored in memory, the engine control unit, despite repeated attempts, cannot turn off the EGR system.

Elimination:

Check if there is a high current consumer at terminal U15.

Check if the control unit is receiving power from the optional equipment.

Check electrical wiring.

Clear the DTC memory and perform a vehicle road test within 10 minutes. Check whether the malfunction code has been generated again. If this DTC was generated again, replace the control unit.

EMS 5666

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5667

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5668

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5669

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5670

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%.

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5680

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

Wrong signal transmitted by the control unit to the solenoid valve controlling the fuel supply to the front group of cylinders.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5681

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

Wrong signal transmitted by the control unit to the solenoid valve controlling the fuel supply to the rear cylinder group

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5682

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5683

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

One of the engine speed sensors is faulty.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5684

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

One of the engine speed sensors is faulty.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5685

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5686

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 5687

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed. At the same time, engine speed, coolant temperature and oil pressure are not displayed on the instrument panel.

In case of this fault, the engine cannot be started.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 5688

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

Due to a fault, there is no communication with the SCR control unit.

If the control unit starts up again normally, in order for this code not to be considered as active, you must first perform a stop engine check.

Elimination:

Clear the trouble code memory. Turn off and turn on the ignition with the ignition key. Check whether the malfunction code has been generated again. If this DTC was generated again, replace the control unit.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 5696

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Control block

Fault:

Unreliable data.

The reasons:

The software in the control unit was changed incorrectly.

Notes:

The fault leads to activation of the fuel supply at the level of 0% and, as long as the fault is present, the engine

speed is limited to the nominal idling speed.

Elimination:

Replace the control unit.

EMS 5697

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fan control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short circuit in the electric circuit of the solenoid valve of the fan.

Notes:

The fan of the cooling system is not controlled. In this case, the motor fan may spontaneously turn on. May affect engine temperature.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5698

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Fan control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the fan solenoid valve circuit.

Notes:

The fan of the cooling system is not controlled. May affect engine temperature.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5699

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Turbine Bypass Valve Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or short in the solenoid circuit for the control valve for bypassing the turbine.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5700

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Turbine Bypass Valve Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the solenoid valve for the turbine bypass valve.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5701

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter control

Fault:

The voltage in the circuit was out of range.

The reasons:

Short to battery + in the starter circuit.

Notes:

A short to battery can cause the starter to inadvertently turn on.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the resistance of the electric circuit of the traction electromagnet.

EMS 5702

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Starter control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground in the electrical circuit of the starter.

Notes:

Starter cannot be turned on.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the resistance of the electric circuit of the traction electromagnet.

EMS 5703

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Generator 1

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Short circuit or open circuit in the generator power supply.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 5704

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Generator 1

Fault:

The current is fed into the excitation winding of the generator when the engine is stopped.

The reasons:

Short to +24 V in the generator circuit.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 5705

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Generator 1

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Short circuit or open circuit in the generator power supply.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 5706

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Generator 1

Fault:

The current is fed into the excitation winding of the generator when the engine is stopped.

The reasons:

Short to +24 V in the generator circuit.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 5707

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Air Conditioning Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short to +24 V in the solenoid circuit.

Notes:

The air conditioning compressor is not controlled. In this case, it is possible spontaneous activation of the air conditioning compressor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5708

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Air Conditioning Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the air conditioning solenoid valve circuit.

Notes:

The air conditioning compressor is not controlled.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5709

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Diffuser On / Off Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short to +24 V in the on / off valve circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5710

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Diffuser On / Off Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the on / off valve circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5713

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Power Supply Voltage

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Possible reasons:

A short to ground in the mass flow sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The mass flow sensor, oil pressure sensor and fuel temperature sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

A malfunction occurs because the mass flow sensor is not working. The engine will work with EGR, but without feedback on the signal of the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve.

Calibration of the mass flow sensor is turned off.

Malfunction affects vehicle emissions of nitrogen oxides (NOx); on the instrument cluster a warning lamp lights up, warning of a high level of pollutants. Vehicles with a NOx control system also display a text message.

Cars with NOx control system

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the mass flow sensor, oil pressure sensor and fuel temperature sensor with connectors and electrical wiring.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 5714

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Solenoid valve of the motor retarder.

Fault:

Voltage continues to flow to the solenoid valve of the motor brakes after it is turned off.

The reasons:

Short to +24 V in the solenoid circuit.

Notes:

The engine retarder is off while the DTC is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5715

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Solenoid valve of the motor retarder.

Fault:

The voltage on the motor solenoid valve of the retarder is significantly lower than the required level.

The reasons:

Short circuit in the solenoid valve circuit.

Notes:

The engine retarder is off while the DTC is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 5716

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Engine brakes

Fault:

The latitude-modulated signal to the modulator of the motor retarder deviates from the expected value.

The reasons:

This malfunction may occur as a result of the wear of the shut-off element of the engine retarder solenoid valve. There are also possible leakage of compressed air from the air tubes or from the actuating cylinder.

Notes:

The effectiveness of the motor brakes is lower than expected.

Elimination:

Ensure that there are no air leaks. Check the solenoid valve.

EMS 5728

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR valve tracking

Fault:

The control unit registers the current in the circuit, although the control unit does not supply power to the circuit.

The reasons:

Short to +24 V in the follower circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Start the engine and let it run at idle for at least 15 seconds.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 5729

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

EGR valve tracking

Fault:

The control unit has detected that the current in the circuit is less than the set value.

The reasons:

Short in the follower circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn on the onboard power with the ignition key.

Activate the EGR check valve (part of the V107 valve block) by supplying 100% using SDP3.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 5744

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter.

Fault:

The engine control unit does not read the crankshaft speed sensor signal.

The reasons:

This malfunction may occur if the starter drive gear cannot engage with the flywheel ring gear while the engine is starting.

This DTC also appears if the engine control unit does not receive an engine speed signal (a speed sensor or electrical wiring is faulty).

Notes:

If within a few seconds after turning on the starter, the engine control unit does not receive a signal from the speed sensor, the starter will automatically shut down.

Elimination:

Clear the DTC and restart the engine.

It may be necessary to rotate the crankshaft at an angle.

In order to accurately determine the cause of the malfunction, check that there are no malfunction codes related to the speed sensors in the memory.

Check the speed sensors and their wiring.

EMS 5745

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Starter.

Fault:

The starter has been active for too long.

The reasons:

For some reason, the starter cannot start the engine.

Notes:

This feature is designed to protect the starter from overheating.

Starter start is ignored.

Elimination:

The starter can be restarted immediately after shutdown.

Cold weather conditions may require a longer start time.

Check for air in the fuel system or other problems with the engine.

EMS 5746

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine crankshaft speed sensor

Fault:

No signal from engine speed sensors

The reasons:

The cause of the malfunction may be:

lack of connection or malfunction of the engine speed sensors

starter malfunction

A fault code can also be generated if the battery is weakly charged and the starter does not work properly.

Notes:

As long as the DTC is active, the fuel supply stops.

Elimination:

If the engine crankshaft rotates when attempting to start, check the engine speed sensors, electrical connectors and wiring.

If the crankshaft does not rotate when the engine is started, check the starter motor.

EMS 5762

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, mechanical failure

Fault:

The engine control unit has detected that the mechanism is not moving properly, with the result that the correct charge air pressure cannot be achieved.

The reasons:

Sticking of mechanical elements in a variable geometry turbocharger. This may be due, for example, to the presence of deposits, icing or damage to the guide vanes.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

The time for confirming the DTC is 1 s, the time for invalidation is 1 s.

Elimination:

Check the mechanical components of the turbocharger by checking the state of the variable geometry turbocharger in SDP3. Mechanical damage can be detected already at room temperature. Jamming due to mechanical tolerances or deposits can be detected when the turbocharger has a high operating temperature. Therefore, it is also necessary to perform a check on a heated turbocharger. The heated turbocharger has a temperature above 300 ° C (the exhaust gas temperature in the turbocharger can reach 600 ° C). Measure the temperature of the turbine housing using a non-contact infrared thermometer.

If the result of the status check is unsatisfactory:

Remove the actuator. Make sure that the lever with the toothed segment can move freely between its extreme positions when moved by hand.

If the lever with the toothed segment can move freely: Replace the actuator. Reinstall the actuator using SDP3 and perform a turbocharger status check with variable geometry.

If the reset or status check fails, replace the actuator.

If the status check is successful, it is possible that the previous adaptation of the actuator was incorrect. No replacement is required.

If the lever with the toothed segment cannot move freely: replace the turbocharger with a variable geometry.

If the status check is successfully passed for both the warm-up and the cold turbocharger, the cause of the DTC is a temporary malfunction, for example, as a result of icing when starting in low temperature conditions.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5763

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, danger of overspeeding

Fault:

Indication of exceeding the allowable rotational speed of a variable geometry turbocharger.

The reasons:

Excessive speeds could be caused by a combination of a number of factors: for example, the width of the annular gap in the nozzle of a turbocharger with variable geometry, the position of the EGR valve and the amount of fuel supplied. The annular gap of the nozzle and the EGR valve is likely to be fully or partially closed at the same time, since there is a high engine load at the time of the malfunction.

Turbine speed is measured by a turbine speed sensor. However, at the same time, the charge air pressure sensor checks the accuracy of the rotational speed. A fault code is generated if the difference between the actual and the estimated speed is too large. The fault may be present either in the turbine speed sensor or in the charge air pressure sensor.

Notes:

To reduce the turbine speed, the engine control unit immediately reduces engine power. Engine power will remain low until the turbine speed is sufficiently reduced.

The time for confirming the malfunction code is 30 s, the acknowledgment time is 5 s.

Elimination:

Check the installation and operation of the turbine speed sensor T120.

Measure the resistance at the turbocharger T120 speed sensor at room temperature. The resistance between pins 1 and 2 should be 850 ohms \pm 50 ohms.

Make sure the air filter is not blocked.

Ensure that the charge air lines are not clogged and do not leak.

Check the installation and operation of the charge air pressure sensor.

Check if any other DTCs are generated. Take the necessary actions to eliminate the causes of other fault codes for the EGR system, fuel system or variable geometry turbocharger that were active.

EMS 5764

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, temperature

Fault:

The temperature in the turbocharger with variable geometry is too high.

The reasons:

The turbocharger does not cool well due to the fact that the cooling channels are blocked, or because the engine has been working for a long time with a high load.

Notes:

The power output of the turbocharger is reduced to prevent damage to the turbocharging system.

The fault code cannot be cleared while the fault is present.

Elimination:

Check:

turbocharger and related items

correct circulation of coolant in a turbocharger motor

Disassemble the turbocharger and the electric motor and make sure that their mechanical components are working properly.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5765

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, temperature

Fault:

Abnormally high temperature in a variable geometry turbocharger.

The reasons:

The turbocharger does not cool well due to the fact that the cooling channels are blocked, or because the engine has been working for a long time with a high load.

Notes:

No description

Elimination:

Clean the cooling channels of the turbocharger with variable geometry.

EMS 5766

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, supply voltage

Fault:

An open circuit voltage supply to the actuator of a variable geometry turbocharger or supply voltage is too low.

The reasons:

An open circuit in the wiring harness or connectors or actuator supply voltage is too low.

Notes:

The engine control unit turns off the EGR system and the engine power decreases. The actuator warns of a malfunction when the supply voltage is below 20 V, which can occur when the starter is operating, at low temperature and when the battery is weak.

The time for confirming the malfunction code is 1–10 s, the acknowledgment time is 1 s.

Elimination:

Check the operation of the F9 actuator fuse on the RP25.

Make sure that the engine control unit receives the correct voltage (24 V) and supplies the correct voltage to the actuator of the turbocharger.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5769

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, several faults in the variable geometry turbocharger system.

Fault:

Several faults were detected in the variable geometry turbocharger system.

The reasons:

The variable geometry turbocharger actuator detected several faults and signaled them.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Eliminate other passive fault codes for variable geometry turbochargers.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler

following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5771

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, mechanical failure

Fault:

The actuator registered a mechanical fault in a variable geometry turbocharger.

The reasons:

Sticking of mechanical elements in a variable geometry turbocharger. This may be due, for example, to the presence of deposits, icing or damage to the guide vanes.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The time to confirm the fault code is 4-600 s. The acknowledgment time of the fault code is 10-20 s.

Elimination:

Check the mechanical components of the turbocharger by checking the state of the variable geometry turbocharger in SDP3. Mechanical damage can be detected already at room temperature. Jamming due to mechanical tolerances or deposits can be detected when the turbocharger has a high operating temperature. Therefore, it is also necessary to perform a check on a heated turbocharger. The heated turbocharger has a temperature above 300 ° C (the exhaust gas temperature in the turbocharger can reach 600 ° C). Measure the temperature of the turbine housing using a non-contact infrared thermometer.

If the result of the status check is unsatisfactory:

Remove the actuator. Make sure that the lever with the toothed segment can move freely between its extreme positions when moved by hand.

If the lever with the toothed segment can move freely: Replace the actuator. Reinstall the actuator using SDP3 and perform a turbocharger status check with variable geometry.

If the reset or status check fails, replace the actuator.

If the status check is successful, it is possible that the previous adaptation of the actuator was incorrect. No replacement is required.

If the lever with the toothed segment cannot move freely: replace the turbocharger with a variable geometry.

If the status check is successfully passed for both the warm-up and the cold turbocharger, the cause of the DTC is a temporary malfunction, for example, as a result of icing when starting in low temperature conditions.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5772

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, electric motor

Fault:

Too much movement of the ring nozzle in a variable geometry turbocharger.

The reasons:

Moving the ring nozzle incorrectly due to damage to the element or improper installation of the electric motor.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Make sure the variable geometry turbocharger is installed correctly.

Reinstall software using SDP3.

Check the turbocharger system with variable geometry, its elements, wiring and connectors.

Check motor drive mechanism for damage and wear.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5773

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, electric motor

Fault:

Incorrect end position of the annular nozzle in a variable geometry turbocharger.

The reasons:

The shortened movement of the ring nozzle may be due to deposits in the turbocharger.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the turbocharger system with variable geometry and its elements.

Check the nozzle for damage or deposits.

EMS 5774

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, actuator

Fault:

The actuator is turned off, which means that the turbocharger cannot provide the correct charge air pressure.

The reasons:

The cause of the malfunction is that the actuator failed in two consecutive attempts to properly register its own internal magnet.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

DTC is instantaneous.

Elimination:

Try to recognize the invalidity of the malfunction code by turning off the ignition with the ignition key. Wait 10 seconds and then start the engine. If the DTC continues to be active:

Remove the actuator. Make sure that the lever with the toothed segment can move freely between its extreme positions when moved by hand.

If the lever with the toothed segment can move freely: Replace the actuator. Reinstall the actuator using SDP3 and perform a turbocharger status check with variable geometry.

If the reset or status check fails, replace the actuator.

If the status check is successful, it is possible that the previous adaptation of the actuator was incorrect. No replacement is required.

If the lever with the toothed segment cannot move freely: replace the turbocharger with a variable geometry.

Clear the DTC by turning off the key with the key and wait 10 seconds. Start the engine.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5775

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, electric motor

Fault:

Too slow response time for nozzle ring.

The reasons:

A malfunction can be caused by carbon in the electric motor or damage to the turbocharger.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

Elimination:

Check the turbocharger system with variable geometry and its elements.

Check the nozzle for damage or deposits.

EMS 5776

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable Geometry Turbocharger, timeout in the CAN bus

Fault:

The rupture of the communication circuit between the engine control unit and the turbocharger actuator with variable geometry. DTC, if not received a certain number of consecutive CAN messages.

The reasons:

Constant or repeated gap in the CAN circuits between the engine control unit and the actuator. Permanent faults are often caused by faults in the electrical wiring harness, connector or engine control unit. Repeated malfunctions are often caused by scratching the wires on the connector.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

The time for confirming the DTC is 0.005 s, the time for acknowledgment is 0.005 s.

Elimination:

Check whether DTC 1686 has also been generated. If so, run diagnostics for this DTC. If not, see instructions below.

Ensure that the connector on the actuator harness is healthy and clean and that there is no moisture in it. Replace the connector if it is damaged.

Disconnect the connector between the actuator and the engine wiring harness.

Measure the resistance between pin 3 and pin 4 in the actuator connector at room temperature. Resistance should be either $120\ \text{ohms} \pm 10\ \text{ohms}$ or $2,600\ \text{ohms} \pm 50\ \text{ohms}$. If the resistance does not match the specified values, replace the actuator.

Measure the resistance between pin 3 and pin 4 in the engine wiring harness connector at room temperature.

Resistance should be $120\ \text{ohms} \pm 10\ \text{ohms}$.

If the resistance does not match the stipulated values:

Disconnect the connector from the engine control unit. Measure the resistance in the cable harness between pin 3 and pin A4_6 at room temperature. Resistance should be $5\ \text{ohms} \pm 4\ \text{ohms}$. Repeat the measurement for pin 4 and pin A4_7. Measure between the individual wires of the wiring harness to eliminate any short circuit in the wiring harness. Measure the resistance between the A4_6 pin and A4_7 pin in the engine control unit at room temperature. Resistance should be $120\ \text{ohms} \pm 10\ \text{ohms}$.

If all of the above measurements gave the correct values, the waiting time on the CAN bus is probably due to friction between the pin and the cylindrical contact in the connector. This type of rubbing is difficult to detect without advanced electronic equipment. Replace the actuator and the connector and the opposite connector in the engine wiring harness. Securely fasten the wiring harness and its connectors.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5777

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, mechanical failure

Fault:

The actuator registered a mechanical fault in a variable geometry turbocharger.

The reasons:

Sticking of mechanical elements in a variable geometry turbocharger. This may be due, for example, to the presence of deposits, icing or damage to the guide vanes.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

The fault code cannot be cleared while the fault is present.

The time to confirm the fault code is 4-300 s. The time of invalidation of the malfunction code is 5-10 s.

Elimination:

Check the mechanical components of the turbocharger by checking the state of the variable geometry turbocharger in SDP3. Mechanical damage can be detected already at room temperature. Jamming due to mechanical tolerances or deposits can be detected when the turbocharger has a high operating temperature. Therefore, it is also necessary to perform a check on a heated turbocharger. The heated turbocharger has a temperature above 300 ° C (the exhaust gas temperature in the turbocharger can reach 600 ° C). Measure the temperature of the turbine housing using a non-contact infrared thermometer.

If the result of the status check is unsatisfactory:

Remove the actuator. Make sure that the lever with the toothed segment can move freely between its extreme positions when moved by hand.

If the lever with the toothed segment can move freely: Replace the actuator. Reinstall the actuator using SDP3 and perform a turbocharger status check with variable geometry.

If the reset or status check fails, replace the actuator.

If the status check is successful, it is possible that the previous adaptation of the actuator was incorrect. No replacement is required.

If the lever with the toothed segment cannot move freely: replace the turbocharger with a variable geometry.

If the status check is successfully passed for both the warm-up and the cold turbocharger, the cause of the DTC is a temporary malfunction, for example, as a result of icing when starting in low temperature conditions.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5778

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Injector supply voltage

Fault:

Incorrect voltage supply to the injectors.

The reasons:

Possible cause is a faulty engine control unit.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Clear the DTC and start the engine again. If this DTC is still active, replace the engine control unit.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5779

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Variable geometry turbocharger, actuator

Fault:

Internal malfunction of the actuator, which means the inability to control the turbocharger with variable geometry.

The reasons:

The variable geometry turbocharger actuator has an internal electrical or mechanical fault that cannot be repaired.

Notes:

To protect the engine, the engine torque is reduced and the EGR system shuts down.

The fault code cannot be cleared while the fault is present.

DTC is instantaneous.

Elimination:

Replace the actuator following the instructions in the manual for service stations, subgroup 01-30.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 5780

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Particulate filter

Fault:

Too high pressure drop in the particulate filter.

The reasons:

The particulate filter is clogged with soot. This is probably due to the fact that the car was operated with a small load for a long time.

Notes:

If soot is present in the particulate filter, fuel consumption increases.

A large amount of soot causes an increase in engine noise, a deterioration in acceleration at high loads, and an increase in the risk of engine failure.

Elimination:

Clean the filter by driving the vehicle at high speed and with a high load for 15 minutes – 1 hour. If the DTC persists, the filter should be replaced.

EMS 5783

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Engine management system, EMS

Fault:

Malfunction in engine management software.

The reasons:

The control system memory may be full or damaged.

Notes:

The system may behave unpredictably.

In the event of a malfunction, fuel injection could be inadvertently stopped.

Elimination:

Save the demo file.

Contact Scania helpdesk and tell them what happened.

Clear the DTC and see if it reappears.

EMS 5801

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas engine, ME7

Fault:

Internal malfunction in ME7.

The reasons:

Internal sensor malfunction or memory malfunction.

Notes:

Engine performance is deteriorating. The system can go into fail-safe mode.

Elimination:

Check battery voltage.

Replace the ME7 unit.

EMS 5802

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Internal malfunction in the main unit.

The reasons:

The cause may be an external electrical fault (for example, a power or ground fault) of the level sensor and temperature in the reagent tank, or an internal hardware fault.

Notes:

The fault affects the level of emissions of nitrogen oxides (NO_x) by the engine.

Elimination:

Check for any other DTCs indicating electrical faults in the system and correct these faults.

If no other fault is found, replace the SCR main unit.

EMS 5803

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

High levels of soot in the particulate filter, automatic and manual regeneration blocked.

The differential pressure in the particulate filter exceeds the pre-set level.

The reasons:

Manual regeneration was not performed.

Malfunction of the differential pressure sensor T141.

Notes:

Automatic and manual regeneration blocked.

Maximum engine torque limit.

Elimination:

Check the trouble codes and troubleshoot the corresponding faults in the EMS and EEC regarding faults in the sensors.

Using SDP3, perform regeneration at a service station to clean the particulate filter.

EMS 5804

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

High level of soot in the black filter. All types of regeneration (automatic, manual and at the service station) are blocked.

The differential pressure in the particulate filter exceeds the pre-set level.

The reasons:

Manual regeneration was not performed. Maximum soot level exceeded for safe regeneration.

Malfunction of the differential pressure sensor T141.

Notes:

All types of regeneration (automatic, manual and at the service station) are blocked.

Maximum engine torque limit.

Elimination:

Check the trouble codes and troubleshoot the corresponding faults in the EMS and EEC regarding faults in the sensors.

The particulate filter is full and must be replaced.

After installing a new filter, adjust the particulate filter load to the base value using SDP3.

EMS 5809

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Excessive temperature drop in the oxidation catalytic converter.

Too short time delay for the temperature to change before or after the oxidation catalytic converter. Installed in case of load changes of less than 60 minutes.

The reasons:

The oxidative catalytic converter is defective or missing.

Malfunction in exhaust gas temperature sensors T158.

Malfunction in other sensors.

Notes:

The engine warning light comes on, automatic and manual regeneration is blocked.

Elimination:

Check the trouble codes and troubleshoot the corresponding faults in the EMS and EEC regarding faults in the sensors.

Do a search for damage that could lead to leaks in the exhaust system between the engine and the silencer.

Ensure that the oxidation catalytic converter is in place and not damaged, see method "Removing and installing diesel particulate filter".

To confirm the repair, complete the journey on a car with various loads for 60 minutes.

EMS 5812

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Particulate filter cracks

Fault:

No description

The reasons:

No description

Notes:

No description

Elimination:

Replace the particulate filter.

EMS 5813

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

VGT, variable geometry turbocharger, internal temperature sensor

Fault:

Short circuit to ground U31.

The reasons:

Short circuit sensor circuit.

Notes:

This DTC can only be deleted when it is inactive. The NOx control system causes delayed torque limits.

Elimination:

Due to the fact that the sensor is installed on the PCB of the VGT actuator, the entire actuator must be replaced.

EMS 5822

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Torque reduction

Fault:

A malfunction has occurred, resulting in a reduction in torque. A fault code appears in combination with another fault code describing the nature of the fault.

The reasons:

A malfunction has occurred, resulting in a reduction in torque. A fault code appears in combination with another fault code describing the cause of the fault.

Notes:

The fault code is deactivated after the fault has been rectified.

Elimination:

Check for other DTCs and correct the corresponding problems.

EMS 5823

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine shutdown

Fault:

A malfunction has occurred, causing the engine to shut down. A fault code appears in combination with another fault code describing the nature of the fault.

The reasons:

A malfunction has occurred, causing the engine to shut down. A fault code appears in combination with another fault code describing the cause of the fault.

Notes:

The fault code is deactivated after the fault has been rectified.

Elimination:

Check for other DTCs and correct the corresponding problems.

EMS 5824

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Feature request ignored

Fault:

A malfunction has occurred, causing the engine control unit to ignore the function request. A fault code appears in combination with another fault code describing the nature of the fault.

The reasons:

A malfunction has occurred, causing the engine control unit to ignore the function request. A fault code appears in combination with another fault code describing the cause of the fault.

Notes:

The fault code is deactivated after the fault has been rectified.

Elimination:

Check for other DTCs and correct the corresponding problems.

EMS 5825

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine idle speed

Fault:

A malfunction has occurred, causing an increase in the idling speed. A fault code appears in combination with another fault code describing the nature of the fault.

The reasons:

A malfunction has occurred, causing an increase in the idling speed. A fault code appears in combination with another fault code describing the cause of the fault.

Notes:

The fault code is deactivated after the fault has been rectified.

Elimination:

Check for other DTCs and correct the corresponding problems.

EMS 5826

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Engine speed

Fault:

There was a malfunction that caused the engine speed to be fixed at the level of the idling speed. A fault code appears in combination with another fault code describing the nature of the fault.

The reasons:

There was a malfunction that caused the engine speed to be fixed at the level of the idling speed. A fault code appears in combination with another fault code describing the cause of the fault.

Notes:

The fault code is deactivated after the fault has been rectified.

Elimination:

Check for other DTCs and correct the corresponding problems.

EMS 5827

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature

Fault:

The charge air temperature is too high.

The reasons:

Possible reasons:

The cooling efficiency of the charge air cooler is too low due to pollution, low air consumption or a similar reason.

Leakage in the charge air system or in the exhaust pipe in front of the turbine of the turbocompressor.

Bypass valve stuck.

The solenoid valve hose of the bypass valve is torn.

The diaphragm of the bypass valve solenoid valve flows.

The turbocharger impeller is dirty or broken.

Turbine wheel of turbocharger broken.

Notes:

The yellow indicator lamp in the instrument panel is on.

Elimination:

Proceed as follows:

Clean the charge air cooler.

Check fan and fan clutch.

Ensure that the intake air entering the intercooler is not too hot.

Make sure that there is no leakage in the charge air system and in the exhaust pipe in front of the turbine of the turbocompressor.

Check the bypass valve.

Clean the turbocharger.

EMS 5829

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Additional accelerator pedal

Fault:

The voltage in the electrical circuit of the additional accelerator pedal was too low.

The reasons:

Short to ground.

Notes:

No description

Elimination:

Check out the optional accelerator pedal, as well as electrical connectors and wiring.

EMS 5830

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Additional accelerator pedal

Fault:

The voltage in the electrical circuit of the additional accelerator pedal was too high.

The reasons:

Short circuit to + battery or open circuit.

Notes:

No description

Elimination:

Check out the optional accelerator pedal, as well as electrical connectors and wiring.

EMS 5832

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fuel drive

Fault:

Malfunction in the fuel supply drive or CAN connection timeout.

The reasons:

The signal from the fuel supply actuator from the coordinator indicates a malfunction, unavailable or gives an implausible value.

Notes:

No description

Elimination:

No description

EMS 5833

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Accelerator pedal

Fault:

The control unit received a signal from the coordinator, indicating an accelerator pedal fault.

The reasons:

Accelerator pedal fault.

Notes:

Instead of the usual accelerator pedal will be used extra.

Elimination:

No description

EMS 5835

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air pressure sensor

Fault:

The charge air pressure sensor shows a static value even when the engine is running at varying speeds.

This DTC can only be deleted when it is inactive.

The reasons:

Faulty charge air pressure sensor.

Notes:

No description

Elimination:

Make sure the sensor value is static.

Check sensor connectors and wiring.

Replace the charge air pressure sensor.

To clear the DTC, let the engine run under load. If the fault is resolved, the fault code becomes inactive and can be erased.

EMS 5836

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust pressure sensor

Fault:

The pressure sensor in the exhaust system shows a static value even when the engine is running at varying speeds.

The reasons:

Malfunction of the pressure sensor in the exhaust system.

Notes:

No description

Elimination:

Make sure the sensor value is static.

Check sensor connectors and wiring.

Replace the pressure sensor in the exhaust system.

EMS 5837

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Exhaust gas temperature sensor in front of the catalytic converter

Fault:

The pressure sensor in the exhaust system in front of the catalytic converter shows a static value.

The reasons:

Malfunctioning exhaust gas temperature sensor in front of the catalytic converter.

Notes:

If the specified value is lower than the actual value, this may result in too small an amount of injected reagent and, thus, an increase in engine emissions of nitrogen oxides (NOx).

If the specified value is higher than the actual value, this may result in too much injected reagent or injecting reagent into a cold catalytic converter.

Elimination:

Check sensor signal. Check sensor connectors and wiring for visible damage.

In the case of engines with a NOx monitoring system, the control unit must verify that the malfunction has been rectified. Verify that the exhaust temperature sensor is working. Using SDP3, execute "Invalidation of DTCs for the NOx Control System". This will take about 30 minutes and should be performed outdoors. Alternatively, four times in a row for 12 minutes, allow the engine to run at a speed of 1000 rpm and an exhaust gas temperature above 200 ° C with the ignition off between the segments. If the fault is resolved, the fault code becomes inactive and can be erased.

EMS 5838

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor after SCR catalytic converter

Fault:

The NOx sensor after the catalytic converter shows a static value. Typically, the value should vary in accordance with the engine speed and load.

The reasons:

Malfunction or incorrect installation of the NOx sensor.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on.

Engine torque is reduced by approximately 40% after the engine has completed 36 hours.

Elimination:

Check if the NOx sensor indicates a static value. Check the sensor connectors and wires and make sure the sensor is installed correctly.

If no other problems are found, replace the sensor.

To verify that the problem is resolved, follow these steps:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

To turn off the test lamp, turn off and turn on the power with the ignition key three times. Pause 10 seconds between each cycle.

EMS 5839

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor in front of the SCR catalytic converter

Fault:

The NOx sensor in front of the catalytic converter shows a static value. Typically, the value should vary in accordance with the engine speed and load.

The reasons:

Malfunction or incorrect installation of the NOx sensor.

Notes:

Malfunction affects engine emissions of NOx. NOx warning lamp is on.

An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check if the NOx sensor indicates a static value. Check the sensor connectors and wires and make sure the sensor is installed correctly. If no other problems are found, replace the sensor.

To verify that the problem is resolved, follow these steps:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 5845

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The value of the differential pressure sensor is more than permissible differs from 0 when the engine is off and the power is on. Without the exhaust gas flow rate, the pressure drop must be close to 0. The fault is set for one minute while the power is on.

The reasons:

Malfunction of the differential pressure sensor T141. Fault in the wiring harness or connectors. Faulty outdoor temperature sensor.

Notes:

The engine warning light comes on.

Elimination:

Check the outdoor temperature sensor fault code and correct the corresponding fault.

Check the differential pressure sensor T141 with the power on and the engine off. The differential pressure should be close to 0. Start the engine and make sure that the value is different from 0 at high idle speed.

Check the wiring harness between the differential pressure sensor and the control unit. Inspect the exhaust system for damage related to the sensor.

If the sensor does not respond as described, replace it.

To confirm the repair:

If the engine is hot, leave it off for at least one hour and then turn on the power for at least one minute.

If the engine is cold, turn on the power for at least one minute.

EMS 5846

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Poor fit between measured pressure drop and engine exhaust gas flow.

The reasons:

Malfunction of the differential pressure sensor T141. Fault in the wiring harness or sensor connector.

Malfunction in other sensors.

Leaks in the exhaust system between the engine and silencers.

Notes:

The engine warning light comes on.

Elimination:

Check the differential pressure sensor T141 with the power on and the engine off. The differential pressure should be close to 0. Start the engine and make sure that the value is different from 0 at high idle speed.
Check wiring harness and sensor connector.
Verify that there is no physical damage to the exhaust system and muffler.
Check the malfunction codes and correct the relevant malfunctions related to the mass flow sensor, charge air pressure sensor and outdoor temperature sensor.
Check for leaks in the exhaust system between the engine and mufflers.
If the sensor does not respond as described, replace it.
To check the quality of repair, allow the engine to work with a variable load up to 20 minutes.

EMS 5847

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Camshaft sensor

Fault:

No description

The reasons:

The engine control unit has an internal software error or hardware malfunction.

Notes:

No description

Elimination:

Clear the fault code.

If this DTC is re-generated, follow these steps:

Make sure the sensor is properly connected to the engine control unit.

Check the sensor electrical wires.

Replace sensor.

Reinstall the software in the engine control unit.

Replace engine control unit.

EMS 5848

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor in front of the SCR catalytic converter

Fault:

The NOx sensor in front of the SCR catalytic converter indicates a too low value.

The reasons:

Possible causes may be a failure of the NOx sensor in front of the SCR catalytic converter or the incorrect installation of the NOx sensor in front of the catalytic converter.

Notes:

The fault does not affect engine emissions. NOx warning lamp is on.

On engines with a NOx control system, torque is reduced by 40% after the engine has been running for 36 hours.

The fault code cannot be cleared while the fault is present.

Elimination:

Check that the NOx sensor is installed correctly. Check sensor connectors and wiring. Perform an SCR system check using SDP3. If no other problems are found, replace the sensor.

To verify that the problem is resolved, follow these steps:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again with the ignition key.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 5849

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor after SCR catalytic converter

Fault:

The NOx sensor after the SCR catalytic converter shows too low a value.

The reasons:

The cause of the malfunction may be an old or incorrectly installed NOx sensor, the formation of reagent crystals in the SCR system or a damaged SCR catalytic converter.

Notes:

The fault does not affect engine emissions. NOx warning lamp is on.

Engine torque is reduced by approximately 40% after the engine has completed 36 hours.

Elimination:

Check for the presence of reagent crystals in the SCR catalytic converter and the presence of visible damage to the SCR catalytic converter.

Check the connectors and wires of the NOx sensor and make sure the sensor is installed correctly. Perform an

SCR system check using SDP3. If no other problems are found, replace the sensor.

To verify that the problem is resolved, follow these steps:

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again with the ignition key.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 5850

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Atmospheric pressure sensor

Fault:

The voltage in the electrical circuit of the atmospheric pressure sensor was too low.

The reasons:

Short to ground or open circuit.

Notes:

No description

Elimination:

Check the atmospheric pressure sensor, as well as electrical connectors and wiring.

EMS 5851

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Atmospheric pressure sensor

Fault:

The voltage in the electrical circuit of the atmospheric pressure sensor was too high.

The reasons:

Short to battery +.

Notes:

No description

Elimination:

Check the atmospheric pressure sensor, as well as electrical connectors and wiring.

EMS 5853

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

The SCR adaptation values ??have reached the maximum end position.

The reasons:

Possible reasons:

Poor quality reagent.

Corked reagent dispenser.

Faulty NOx sensors.

Failure to measure exhaust gas flow.

Malfunction of the charge air pressure sensor T122.

Exhaust gas leaks.

Notes:

For information only.

Elimination:

Check the quality of the reagent.

Check reagent dispenser.

Check the NOx sensors.

Check for large exhaust leaks.

Check the charge air pressure sensor T122.

EMS 5854

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

The SCR adaptation values ??have reached the minimum end position.

The reasons:

Possible reasons:

Poor quality reagent.
Corked reagent dispenser.
Faulty NOx sensors.
Failure to measure exhaust gas flow.
Malfunction of the charge air pressure sensor T122.
Exhaust gas leaks.

Notes:

For information only.

Elimination:

Check the quality of the reagent.
Check reagent dispenser.
Check the NOx sensors.
Check for large exhaust leaks.
Check the charge air pressure sensor T122.

EMS 5855

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Variable Geometry Turbocharger, VGT

Fault:

Installation of a variable geometry turbocharger was not completed.

The reasons:

During installation, the engine was started or SDP3 disconnected.

Notes:

Actuator does not respond to control signals.

Elimination:

Perform the installation again and make sure the programming and adaptation is complete.

EMS 5856

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Oxidizing Catalytic Converter

Fault:

The temperature sensor in front of the oxidative catalytic converter shows a constant value despite the fact that the engine operates at different speeds and loads.

The reasons:

Temperature sensor malfunction or incorrect positioning of the sensor in the exhaust gas stream.

Notes:

No description

Elimination:

Check the temperature sensor, its connector and wiring.

If the measured value remains constant and there are no other faults, replace the sensor and erase the DTCs.

EMS 5859

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The pressure drop in the particulate filter is less than expected. Possible suspicion of the complete lack of functioning of the filter.

It is installed when driving with a load for less than 30 minutes.

The reasons:

Particulate filter missing or damaged.

Malfunction of differential pressure sensor.

Malfunction in other sensors.

Notes:

The engine warning light comes on and filter regeneration is blocked.

Elimination:

Check the malfunction codes and eliminate the corresponding malfunctions associated with the T141 differential pressure sensors.

Check the malfunction codes and eliminate the corresponding malfunctions associated with the T158 temperature sensors.

Check the malfunction codes and troubleshoot the associated mass flow sensor malfunctions, such as the outside temperature sensor and the charge air pressure sensor.

Search for leaks in the exhaust pipe between the engine and the muffler or in the muffler itself.

Ensure that the access door on the muffler is properly installed and sealed.

Search for signs of a damaged filter: Soot in the exhaust pipe after the diesel particulate filter is one of the signs of a damaged filter. If soot is present in the outlet of the exhaust pipe, check the outlet of the filter through the inspection hatch. Black soot spots on the filter outlet indicate a damaged filter unit.

Damage to the filter may be caused by fuel or oil leakage or a too high particulate load in the diesel particulate filter. Check the fuel system using SDP3, for example, for injector faults. Low engine oil may be a sign of oil leakage.

To confirm the repair, drive the vehicle under load for 30 minutes.

EMS 5860

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The pressure drop in the particulate filter is less than expected. This may indicate a poor functioning of the filter.

The reasons:

Particulate filter is damaged or missing.

Malfunction of differential pressure sensor T141 or other sensors.

Notes:

The engine warning light comes on, filter regeneration is not allowed.

Elimination:

Check the malfunction codes and eliminate the corresponding malfunctions related to the T141 differential pressure sensor.

Check the malfunction codes and eliminate the relevant malfunctions related to the T158 temperature sensor.

Check the malfunction codes and eliminate the relevant malfunctions related to the mass flow sensor, outdoor temperature sensor and charge air pressure sensor.

Check for leaks in the exhaust system between the engine and the muffler, or in the muffler.

Ensure that the inspection hatch in the silencer is fitted with a properly installed seal.

Search for signs of filter damage. Soot in the exhaust system after the diesel particulate filter indicates a damaged filter. If soot is present in the exhaust pipe, remove the inspection hatch and check the filter outlet.

Black spots of soot on the outlet of the filter indicate a damaged filter element. Damage to the filter may be caused by a leak of oil or fuel or a too high particulate load in the diesel particulate filter.

Check nozzles with SDP3.

A low engine oil level may indicate an oil leak.

To check the quality of repair, allow the engine to work with a load of up to 30 minutes.

EMS 5861

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature sensor after the oxidative catalytic converter shows a constant value despite the fact that the engine operates at different speeds and loads.

The reasons:

Temperature sensor malfunction or incorrect positioning of the sensor in the exhaust gas stream.

Notes:

No description

Elimination:

Check the temperature sensor, its connector and wiring.

If the measured value remains constant and there are no other faults, replace the sensor and erase the DTCs.

EMS 5863

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Variable geometry turbocharger

Fault:

The temperature sensor of the turbocharger with variable geometry is blocked at one value.

The reasons:

Malfunction of the temperature sensor of the turbocharger with variable geometry.

Notes:

No description

Elimination:

Check the connectors and wiring of the turbocharger motor with variable geometry.

If there are no faults in the connectors and wiring, replace the motor with a variable geometry turbocharger. The entire motor should be replaced due to the fact that the temperature sensor is located on the printed circuit board inside the motor.

EMS 5866

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The charge air temperature sensor indicates a too high value.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.

Replace sensor.

EMS 5867

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The charge air temperature sensor indicates a too low value.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.

Replace sensor.

EMS 5868

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is higher than expected.

The reasons:

The efficiency of the intercooler is low or the value from the charge-air temperature sensor is too high.

Notes:

No description

Elimination:

Restore the efficiency of the intercooler by cleaning it, check the air flow and the fan.

Check the intake and exhaust manifolds for leaks. Check the turbine bypass valve and clean the turbocharger.

Check wiring harness and charge air temperature sensor connector.

Replace the charge air temperature sensor.

EMS 5869

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is lower than expected.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.

Replace the charge air temperature sensor.

EMS 5870

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is higher than expected.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.

Replace the charge air temperature sensor.

EMS 5871

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is lower than expected.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.

Replace the charge air temperature sensor.

EMS 5872

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is higher than expected.

The reasons:

Low efficiency of the intercooler and / or EGR cooler.
Too high value from the charge air temperature sensor.

Notes:

No description

Elimination:

Clean and test the intercooler and the EGR cooler.
Check wiring and connectors.
Replace the charge air temperature sensor.

EMS 5873

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Charge air temperature sensor

Fault:

The temperature of the charge air is lower than expected.

The reasons:

Faulty charge air temperature sensor.

Notes:

No description

Elimination:

Check wiring and connectors.
Replace the charge air temperature sensor.

EMS 5874

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor after SCR catalytic converter

Fault:

The signal from the NOx sensor after the SCR catalytic converter is lower than expected.

The reasons:

Possible reasons:

NOx sensor malfunction after SCR catalytic converter.

Reagent crystals are present in the SCR system.

The NOx sensor after the SCR catalytic converter is not installed correctly.

Malfunction in the SCR catalytic converter.

Notes:

The level of toxic vehicle emissions is increasing. NOx warning lamp is on.

After the engine has been running for 36 hours from the time the malfunction has been detected, the engine torque will be reduced by approximately 40%.

Elimination:

Check out the following:

SCR catalytic converter for damage or an SCR system for the presence of reagent crystals.

The correct installation of the NOx sensor after the SCR catalytic converter.

NOx sensor, connectors and wiring for a fault.

If the NOx sensor after the SCR catalytic converter is installed correctly and the SCR catalytic converter is working, perform a SDP3 System Check. If the sensitivity of the NOx sensor then remains low, replace the NOx sensor after the SCR catalytic converter.

To verify that the problem is resolved, follow these steps:

Turn off the onboard power with the ignition key and wait at least 90 seconds. Then turn on the ignition again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Extinguish the test lamp by turning the ignition key off and on three times. Pause 10 seconds between each cycle.

EMS 5876

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor in front of the SCR catalytic converter

Fault:

The NOx sensor signal value before the SCR catalytic converter is lower than expected.

The reasons:

Possible reasons:

NOx sensor malfunction in front of the SCR catalytic converter.

NOx sensor in front of the SCR catalytic converter is not installed correctly.

Notes:

The level of toxic vehicle emissions is increasing. The control lamp for the NOx control system lights up and a text message is displayed.

The fault code cannot be cleared while the fault is present.

Elimination:

Check out the following:

Proper installation of the NOx sensor in front of the SCR catalytic converter.

NOx sensor, connectors and wiring for a fault.

If the NOx sensor in front of the SCR catalytic converter is installed correctly, perform a system check using SDP3. If the sensitivity of the NOx sensor then remains low, replace the NOx sensor in front of the SCR catalytic converter.

To verify that the problem is resolved, follow these steps:

Turn off the onboard power with the ignition key and wait at least 90 seconds. Then turn on the ignition again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Extinguish the test lamp by turning the ignition key off and on three times. Pause 10 seconds between each cycle.

EMS 5877

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Upper NOx sensor shows implausible value.

Fault:

General DTC for implausible NOx sensor value.

If this DTC is active, DTC 16CE, 16D8, 16F4 and / or 16FA (which describes the fault in more detail) is also active.

The reasons:

See the cause of another active DTC or DTC for the same fault.

Notes:

No description

Elimination:

Troubleshoot problems indicated by other active DTCs or DTCs related to the same fault.

EMS 5878

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Lower NOx sensor indicates an implausible value.

Fault:

General DTC for implausible NOx sensor value.

If this DTC is active, DTC 16CE, 16D9, 16F2 and / or 16FB (which describes the fault in more detail) is also active.

The reasons:

See the cause of another active DTC or DTC for the same fault.

Notes:

No description

Elimination:

Troubleshoot with another active fault code or fault codes for the same fault.

EMS 5881

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Fan speed sensor

Fault:

Short circuit to + fan speed sensor battery.

The reasons:

Electrical connectors or electrical leads to the fan speed sensor were damaged.

Notes:

The fan will operate at maximum speed until the fault is eliminated.

Elimination:

Check fan speed sensor, electrical connectors and wiring.

EMS 5882

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor in front of the SCR catalytic converter

Fault:

NOx sensor in front of the SCR catalytic converter shows an incorrect value.

The reasons:

Possible reasons:

NOx sensor malfunction in front of the SCR catalytic converter.

Crystallization of the reagent in the SCR system

Notes:

The level of toxic vehicle emissions is increasing. NOx warning lamp is on.

Elimination:

Replace the NOx sensor in front of the SCR catalytic converter. Clear the fault code.

Extinguish the test lamp by turning the ignition key off and on three times at 10-second intervals three times.

EMS 5883

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor after SCR catalytic converter

Fault:

The NOx sensor after the SCR catalytic converter shows an incorrect value.

The reasons:

Possible reasons:

NOx sensor malfunction after SCR catalytic converter.

Crystallization of the reagent in the SCR system

Notes:

The level of toxic vehicle emissions is increasing. NOx warning lamp is on.

Engine torque is reduced by approximately 40% after the engine has completed 36 hours.

Elimination:

Check the SCR system for reagent crystals.

If there are crystals in the SCR system, do the following:

Remove the crystals.

Get two new NOx sensors. Replace the NOx sensor after the SCR catalytic converter.

Start the engine and let it run for 10 seconds. Then stop the engine.

Replace the NOx sensor after the SCR catalytic converter. Repeat step 3.

Install the original NOx sensor after the SCR catalytic converter. Repeat step 3.

If the DTC has become inactive: Clear the DTC.

Extinguish the test lamp by turning the ignition key off and on three times at 10-second intervals three times.

If there are no crystals in the SCR system, replace the NOx sensor after the SCR catalytic converter. Clear the fault code. Extinguish the test lamp by turning the ignition key off and on three times at 10-second intervals three times.

EMS 5884

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

Temperature sensors before and after the oxidative catalytic converter and after the diesel particulate filter show mutually improbable values ??when compared to pairs. It is installed during 60 minutes of driving under load, not in idle mode.

The reasons:

Malfunction in temperature sensors T158.

Leakage of oil or fuel in the muffler.

Malfunction in other sensors.

Notes:

The engine warning light comes on, regeneration is completely blocked.

Elimination:

Compare with SDP3 the values ??of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 1 / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust manifold between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

Remove the flexible pipe coming from the muffler and check if black or white smoke is released when the throttle is opened. White smoke indicates the presence of excess fuel, which may result in the registration of this

DTC.

To check the quality of the repair, let the engine run under load for 60 minutes.

EMS 5885

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

A temperature sensor located in front of the oxidizing catalytic converter produces an incompatible value when pairwise matching the three sensors. The test is carried out for 60 minutes while driving under load, but not during idling.

The reasons:

Malfunction of temperature sensors T158.

Oil or fuel leak in a silencer.

Malfunction of other sensors.

Notes:

The engine warning light comes on, regeneration is completely blocked.

Elimination:

Compare with SDP3 the values of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 1 / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

Remove the flexible pipe coming from the muffler and check if black or white smoke is released when the throttle is opened. White smoke indicates the presence of excess fuel, which may result in the registration of this DTC.

To check the quality of the repair, let the engine run under load for 60 minutes.

EMS 5887

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

CAN fault from the EEC control unit for T158 temperature sensors.

The reasons:

Sensor incorrectly connected or faulty.

Notes:

No description

Elimination:

Check the trouble codes in the EEC control unit.

Check the wiring harness and the connector between the sensor and the EEC control unit.

Replace sensor.

EMS 5888

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

An improbably high temperature in front of an oxidative catalytic converter.

The reasons:

Sensor malfunction before oxidative catalytic converter.

In addition, a fault code may appear if the design of the exhaust system has been changed.

Notes:

A malfunction may result in too much injected reagent or injecting reagent into a cold catalytic converter.

Elimination:

Check the sensor in front of the oxidation catalytic converter and its connector and wiring.

EMS 5889

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

An unbelievably low temperature in front of an oxidative catalytic converter.

The reasons:

Sensor malfunction before oxidative catalytic converter.

The sensor is not installed in the exhaust system.

In addition, a fault code may appear if the design of the exhaust system has been changed.

Notes:

A malfunction may result in too little injected reagent, as a result of which the NOx emission may become too large.

Elimination:

Check the sensor before the oxidation catalytic converter. Make sure it is installed in the exhaust system.

Check its wiring and connectors.

EMS 6146

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Particulate filter does not cause the expected temperature change. It may be suspected that the filter is not functioning.

The reasons:

Malfunction of temperature sensor T158 or other sensors.

Particulate filter damaged or removed.

Notes:

The engine warning light comes on.

Regeneration of the filter is not allowed.

Elimination:

Check the malfunction codes and eliminate the relevant malfunctions related to the T158 temperature sensor.

Check the malfunction codes and eliminate the relevant malfunctions related to the mass flow sensor, outdoor temperature sensor and charge air pressure sensor.

Check for leaks in the exhaust system between the engine and the muffler, or in the muffler.

Search for signs of filter damage. Soot in the exhaust system after the diesel particulate filter indicates a damaged filter. If soot is present in the exhaust pipe, remove the inspection hatch and check the filter outlet.

Black spots of soot on the outlet of the filter indicate a damaged filter element. Damage to the filter may be caused by a leak of oil or fuel or a too high particulate load in the diesel particulate filter.

Check nozzles with SDP3.

A low engine oil level may indicate an oil leak.

To check the quality of repair, let the engine run at variable speed up to 30 minutes.

EMS 6147

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

temperature sensor

Fault:

Temperature too high after oxidation catalytic converter.

The reasons:

Oil or fuel leakage in the exhaust gas stream before the oxidation catalytic converter.

Temperature sensor malfunction.

Notes:

The red engine indicator light comes on.

Elimination:

Using SDP3, compare temperature sensors T158 removed from the muffler. After a short time, all sensors show almost the same temperature. If not, replace the appropriate item.

Check for leakage of oil or fuel in the exhaust gas stream before the oxidation catalytic converter. See "Internal leakage" and "Cylinder pressure balance" methods in SDP3. A low engine oil level may indicate an oil leak.

A malfunction in the differential pressure sensor can cause a high particulate load, which leads to an increase in temperature. Check the differential pressure sensor for reading when the engine is off and the ignition is on. The value should be close to zero. Start the engine and make sure that at high idle speeds the value is different from zero. Otherwise, replace the differential pressure sensor. Check the connector and wiring harness and check for damage to the exhaust pipe between the engine and the muffler or the muffler.

EMS 6148

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Hydrocarbon injection off.

The reasons:

Failure of sensor signals.

Notes:

Regeneration of the filter is not allowed.

Elimination:

Check the active fault codes and correct the corresponding faults for the sensors in the EMS engine management system and in the EEC3 exhaust gas after-treatment system.

To confirm the repair, turn on the ignition for 10 seconds.

EMS 6149

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Regeneration of the diesel particulate filter is not allowed.

The reasons:

Weak signal from EGR valve position sensor.

Notes:

No description

Elimination:

Check active EGR fault codes and correct relevant faults.

To confirm the repair, turn on the ignition for 10 seconds.

EMS 8192

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Coolant temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the coolant temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line

pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value. If the engine is actually colder than the pre-programmed value, it will idle more unevenly and be more difficult to start.

The engine will operate at a high idle speed as long as the fault is present.

On engines equipped with an EGR system, the engine control unit will turn off the system.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine. Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 8193

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Coolant temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short to coolant temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value. If the engine is actually colder than the pre-programmed value indicates, it will idle more irregularly and be more difficult to start.

The engine will operate at a high idle speed as long as the fault is present.

On engines equipped with an EGR system, the engine control unit will turn off the system.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine. Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 8194

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If a fault occurs, the control unit uses a pre-programmed value. If the engine is actually colder than the pre-programmed value indicates, it will idle more irregularly and be more difficult to start.

The engine will operate at increased idle speed as long as there is a malfunction.

The engine control unit will turn off the EGR system on engines equipped with this system.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 8194

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Particulate filter

Fault:

Too low pressure drop in the particulate filter.

The reasons:

A possible malfunction is the absence of a filter in the muffler or a malfunction of the differential pressure sensor.

Notes:

This malfunction may lead to an increase in soot particulate emissions.

Elimination:

Check:

whether the filter is installed in the muffler
differential pressure sensor
connections in front of the silencer and after it to the differential pressure sensor
signal between differential pressure sensor and engine control unit
no damage to exhaust system and particulate filter
EMS 8204

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature in the area after the diesel particulate filter (DPF) is excessively high for regeneration. It is registered by a temperature sensor in the area after the filter in less than 2 minutes.

The reasons:

Leakage and oil or fuel entering the exhaust stream in front of the silencer. Temperature sensor malfunction T158.

Notes:

The red engine indicator light comes on. Filter regeneration is completely blocked.

Elimination:

Check the EMS and EEC fault codes associated with the sensor malfunction and make the necessary repairs. Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

A malfunction in the differential pressure sensor can create an excessively high particulate load, as a result of which an excessively high temperature may occur during regeneration. Perform the following sensor test: When the power is on, the value should be approximately zero. Start the engine and make sure that the high idle speed value is different from zero.

If the fault persists, check the wiring harness and connectors between the sensor and the control unit. Also ensure that there is no damage to the exhaust system, and the sensor piping is not blocked.

If the problem persists, replace the sensor.

To verify the effectiveness of the repair, perform a service regeneration procedure using SDP3. The temperature in the exhaust system is very high, it can reach 500 ° C.

EMS 8205

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature in the area after the diesel particulate filter (DPF) is excessively high for normal movement. It is registered by a temperature sensor after the filter.

The reasons:

Leakage and oil or fuel entering the exhaust stream in front of the silencer. Temperature sensor malfunction T158.

Notes:

The red engine warning light comes on, the engine stops.

Elimination:

Compare with SDP3 the values of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 l / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. See “Internal leakage” and “Cylinder pressure balance” in SDP3. A low engine oil level may indicate an oil leak.

A malfunction in the differential pressure sensor can create an excessively high particulate load, as a result of which an excessively high temperature may occur during regeneration. Perform the following sensor test: When the power is on, the value should be approximately zero. Start the engine and make sure that the high idle speed value is different from zero.

If the fault persists, check the wiring harness and connectors between the sensor and the control unit. Also ensure that there is no damage to the exhaust system, and the sensor piping is not blocked.

EMS 8206

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature at the front of the diesel particulate filter (DPF) is excessively high for regeneration. It is registered by a temperature sensor in the area in front of the filter in less than 2 minutes.

The reasons:

Leakage and oil or fuel entering the exhaust stream in front of the silencer. Temperature sensor malfunction

T158.

Notes:

The red engine indicator light comes on. Filter regeneration is completely blocked.

Elimination:

Check the EMS and EEC fault codes associated with the sensor malfunction and make the necessary repairs. Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

To verify the effectiveness of the repair, perform a service regeneration procedure using SDP3. The temperature in the exhaust system is very high, it can reach 500 ° C.

EMS 8207

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Oxidizing Catalytic Converter

Fault:

The temperature difference between the inlet and outlet openings of the oxidation catalytic converter is greater than expected during normal motion.

The reasons:

Leakage and oil or fuel entering the exhaust stream in front of the silencer.

Malfunction of temperature sensors T158 or other sensors in the engine management system EMS or in the exhaust gas neutralization system EEC3.

Notes:

The engine warning light comes on.

Elimination:

Using SDP3, compare temperature sensors T158 removed from the muffler. After a short time, all sensors show almost the same temperature. If not, replace the appropriate item.

Check the malfunction codes and eliminate the corresponding malfunctions for the sensors in the EMS engine management system or in the EEC3 exhaust gas after-treatment system.

Check for leakage of oil or fuel in the exhaust gas stream before the oxidation catalytic converter. Check nozzles with SDP3. A low engine oil level may indicate an oil leak.

To check the quality of repair, allow the engine to work with a load of up to 30 minutes.

EMS 8216

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Additional drive 14 (aux14), short circuit from low to +24

Fault:

Reset is not defined.

The reasons:

No description

Notes:

No description

Elimination:

No description

EMS 8225

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Additional drive 14 (aux14), open load

Fault:

Reset is not defined.

The reasons:

No description

Notes:

No description

Elimination:

No description

EMS 8234

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR Coolant Valve

Fault:

The voltage on the coolant valve in the SCR heating circuit is out of range.

The reasons:

An open circuit or short to ground on the valve circuit.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off.

When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

The nominal valve resistance at room temperature is 140 ohms.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8234

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Water Reagent Heating Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or short to ground in the water valve electrical circuit to heat the reagent.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each

other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

The normal resistance of a water valve at room temperature should be approximately 140 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8236

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Water Reagent Heating Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit on the electric circuit + 24 V in the electric circuit of the water heating valve.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

The normal resistance of a water valve at room temperature should be approximately 140 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8236

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR Coolant Valve

Fault:

Short to + coolant valve battery in the SCR heating circuit.

The reasons:

No description

Notes:

The SCR system is deactivated and the injection of the reagent is turned off.

When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

The nominal valve resistance at room temperature is 140 ohms.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then

turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8237

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

The pressure in the SCR system drops more than expected when the reagent is not injected.

The reasons:

Leakage in the reagent dispenser, reagent supply lines or internal leaks in the main unit.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off.

When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check for leakage in the SCR system. Leakage in the main unit is an unusual phenomenon. If this happens, replace the main unit.

Perform system checks in SDP3.

In order to verify that the malfunction has been rectified, in SDP3, recognize the invalidity of the malfunction codes of the NOx control system. Recognition of invalidity must be performed outdoors because the exhaust gases are very hot. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8237

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

During periods when the reagent is not injected, the pressure in the SCR system decreases more than it should be.

The reasons:

Leaks in reagent supply lines, reagent dispenser or internal leaks in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for leaks in the SCR system.

Check the vent valve. If the vent valve is stuck open, replace the vent valve.

If the fault lies in the main unit, it should be replaced. However, it is uncharacteristic that the fault lay in the main unit. Before replacing the SCR control unit, make sure that the fault is not caused by something else.

Perform the system checks that are provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is located on the “Checks” tab in SDP3. This test should be performed outdoors because the exhaust gas temperature becomes very high and there is a risk that the exhaust gas hose will melt. It takes about 5-30 minutes to complete the test.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8247

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

The air pressure in the SCR system was out of range.

The reasons:

The malfunction may be due to too low air pressure from the vehicle to the SCR system.

This can also be due to air leakage in the SCR system: either internal leakage in the main unit or in the air ducts outside the main unit.

A fault code is also generated if the pressure is too high due to blockage in the SCR system.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check whether the air pressure in the car's compressed air system was too low at the time the fault code was issued.

If the air pressure was below 7.2 bar, there may be a fault not related to the SCR system.

Check for leaks or blockages in the air lines.

If the fault lies inside the main unit, the main unit should be replaced.

Perform the system checks that are provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The conditions under which the control unit checks:

There should be no active DTCs for air pressure or reagent pressure.

The air pressure in the compressed air supply system of the car should be in the range of 7.1 – 8.5 bar.

Start the engine and turn it off. Repeat four times. The control unit must perform the test in four consecutive cycles.

You can click on the DTC monitoring function and view the DTC. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8249

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit. Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8250

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

Short circuit to + battery level sensor in the reagent tank.

The reasons:

Short circuit to + battery level sensor in the reagent tank.

Notes:

Reagent injection is turned off.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92 – 397 ohms.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8252

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

Short circuit in the level sensor circuit in the reagent tank.

The reasons:

Short circuit in the level sensor circuit in the reagent tank.

Notes:

Reagent injection is turned off.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92 – 397 ohms.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8252

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank level sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the level sensor in the reagent tank.

Notes:

If the signal voltage is out of range, the control unit uses a preprogrammed value of 100% (full tank).

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92–397 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8253

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank level sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the level sensor in the reagent tank.

Notes:

If the signal voltage is out of range, the control unit uses a preprogrammed value of 100% (full tank).

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NO_x) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NO_x control, a text message is also displayed.

Cars with NO_x control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction has been resolved, in order for the malfunction code to become inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92–397 ohms.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8253

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

An open in the reagent tank level sensor circuit.

The reasons:

An open in the reagent tank level sensor circuit.

Notes:

Reagent injection is turned off.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92–397 ohms.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8255

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Low reagent

Fault:

Low level of reagent in the tank.

The reasons:

Low level of reagent in the tank.

Notes:

Reagent injection is turned off, which negatively affects the level of NOx emissions from the engine.

In the case of engines with a NOx control system, a 40% reduction in torque is active as long as the DTC is active.

Elimination:

Fill the tank as described in the Operation Manual and wait a few minutes.

If the DTC is still active, check the level sensor float.

On engines with a NOx control system, this corrective action should be monitored as follows: Turn on the on-board power supply with the ignition key. If the fault is resolved, the fault code will become inactive.

EMS 8255

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Level in the reagent tank

Fault:

The amount of reagent in the tank below the permissible value.

The reasons:

Or too little reagent in the tank or a level sensor in the tank is faulty.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Refill reagent. If there is enough reagent in the tank, check the level sensor.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8256

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8260

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit. Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8260

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Electrical failure of the reagent temperature sensor.

The reasons:

Electrical failure of the reagent temperature sensor.

Notes:

Reagent injection is turned off.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8261

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Exceeded lower temperature limit.

The reasons:

Internal malfunction in the main unit.

Notes:

Reagent injection is turned off.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8261

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8265

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Dispenser

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit on the + 24 V electrical circuit in the reagent dispenser electrical circuit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

The resistance of the reagent dispenser should be 14-15 Ohms at a temperature of 20 ° C.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8263

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Dispenser

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or a short to ground in the electrical circuit of the reagent dispenser.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated . Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

The resistance of the reagent dispenser at a temperature of 20 ° C should be in the range between 14 Ohm and 15 Ohm.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8263

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent Dispenser

Fault:

An open circuit or short to ground in the electrical circuit of the reagent dispenser.

The reasons:

An open circuit or short to ground in the electrical circuit of the reagent dispenser.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off.

When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC. Communication with the engine control unit can also be interrupted. Restore it by turning off the power with the ignition key, waiting 90 seconds and then turning it on again.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on.

Elimination:

Check the electrical components, electrical connectors and wiring.

The resistance of the reagent dispenser should be 14-15 Ohms at 20 ° C.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8265

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent Dispenser

Fault:

Short to + reagent dispenser battery or power circuit.

The reasons:

Short to + reagent dispenser battery or power circuit.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off.

When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC. Communication with the engine control unit can also be interrupted. Restore it by turning off the power with the ignition key, waiting 90 seconds and then turning it on again.

Elimination:

Check the electrical components, electrical connectors and wiring.

The resistance of the reagent dispenser should be 14-15 Ohms at 20 ° C.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8267

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Unreliable reagent pressure.

The reasons:

Internal malfunction in the main unit.

Notes:

Reagent injection is turned off.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on.

Elimination:

Replace the main unit.

Using SDP3, execute "Invalidation of DTCs for the NOx Control System". This procedure must be performed outdoors because the exhaust gases are very hot.

Alternatively, allow the engine to operate at speeds above 1000 rpm until the SCR system starts. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8267

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure in the system during normal operation was above the allowable value.

The reasons:

The cause of the malfunction may be:

Malfunction in diaphragm pump.

Malfunction of the main unit

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Replace diaphragm pump.

Check if diesel fuel has entered the main unit. If diesel is present in the unit, thoroughly flush the main unit and replace the diaphragm pump, gaskets and vent valve.

Replace the main unit.

Continue as follows to ensure that the problem is resolved:

There should be no active DTCs for air pressure in the SCR system, for faults in the main unit, for blocking the injection device, or for a temperature sensor downstream of the catalytic converter. Nor should there be an active DTC for leaks in the SCR system.

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors because the exhaust gas temperature becomes very high and there is a risk that the exhaust system will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can perform the following actions so that the control unit recognizes the failure as invalid:

Start the engine and verify that the engine speed is above 1000 rpm and that the SCR system starts. If the temperature is below -8 ° C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8268

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8268

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Reagent pressure sensor, voltage outside acceptable range.

The reasons:

Internal malfunction in the main unit.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8269

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Reagent pressure sensor, voltage outside permissible limits.

The reasons:

Internal malfunction in the main unit.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off the power with the ignition key, waiting 90

seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8269

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8277

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Mountain brake drive, open load

Fault:

Reset not defined

The reasons:

No description

Notes:

No description

Elimination:

No description

EMS 8280

Blocks:

9000000, 2089202, 2089201, 2089200

Title:

Drive mountain brake, short to low to +24

Fault:

Reset not defined

The reasons:

No description

Notes:

No description

Elimination:

No description

EMS 8282

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

The voltage in the reagent tank temperature sensor circuit was out of range.

The reasons:

An open circuit.

Notes:

No description

Elimination:

Check the electrical components, electrical connectors and wiring. To test the sensor, remove it and measure the resistance. At a temperature of 15–25 ° C, the resistance should be in the range of 1500–2100 O.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8283

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

Invalid reagent temperature.

The reasons:

The temperature sensor values are invalid, or the tank heating system is faulty.

Notes:

No description

Elimination:

Check for a signal from the temperature sensor in the tank. Check sensor connectors and wiring for visible damage. Check the coolant valve to warm up the tank for binding in the closed position.

On engines with a NOx control system, this corrective action should be monitored as follows:

Reagent temperature above -8 ° C:

Switch off the on-board power supply with the ignition key, wait 90 seconds.

Turn on the power.

EMS 8284

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank

Fault:

Reagent temperature sensor short circuit.

The reasons:

Reagent temperature sensor short circuit.

Notes:

No description

Elimination:

Check the electrical components, electrical connectors and wiring. To test the sensor, remove it and measure the resistance. At a temperature of 15–25 ° C, the resistance should be in the range of 1500–2100 O.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8284

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the tank temperature sensor electrical circuit

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

To verify that the sensor is working, remove it and measure its resistance.

At a temperature of 15-25 ° C, the resistance should be in the range of 1 500-2 100 Ohm.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8285

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open in the temperature sensor circuit

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

To verify that the sensor is working, remove it and measure its resistance.

At a temperature of 15-25 ° C, the resistance should be in the range of 1 500-2 100 Ohm.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8291

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The SCR control unit indicated that the battery voltage was below the allowable value.

It was below 8.6 V.

The reasons:

The fault may occur during a cold start, if the battery is in poor condition.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the onboard power supply with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8291

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR control unit

Fault:

Low battery voltage.

The reasons:

The fault may occur during a cold start, if the battery is in poor condition.

Notes:

Reagent injection is turned off.

Elimination:

Check the battery, alternator, electrical connectors and wiring.

Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8292

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR control unit

Fault:

High battery voltage.

The reasons:

Malfunction may occur when using a forced charge device.

Notes:

High voltage can damage the SCR system.

Reagent injection is turned off.

Elimination:

Check the battery, alternator, electrical connectors and wiring.

Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8292

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The SCR control unit indicated that the battery voltage was above the allowable value.

It was above 64.6 V.

The reasons:

This may be caused by the work start-charger.

Notes:

High voltage levels can damage the SCR system.

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the onboard power supply with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8319

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent

Fault:

Insufficient reduction in NOx emissions even though the maximum amount of reagent is injected.

The reasons:

Inadequate reagent quality.

Injection nozzle closure.

Worn low sensitivity NOx sensor.

Faulty charge air pressure sensor or other sensor in the system.

Worn catalytic converter.

Notes:

No description

Elimination:

Check other malfunction codes and eliminate related problems related to NOx emissions.

Make sure that the reagent tank contains the correct type of reagent.

Check for blockage in the reagent hoses or in the injection nozzle.

Make sure the reagent dispenser is not blocked.

Check the NOx sensors. Do not confuse the sensors before and after the catalytic converter.

Check that the catalytic converter is intact.

EMS 8320

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

A temperature sensor located in front of the oxidizing catalytic converter produces an incompatible value when pairwise matching the three sensors.

The reasons:

Malfunction in temperature sensors T158.

Leakage of oil or fuel in the muffler.

Notes:

Filter regeneration blocked.

Elimination:

Compare with SDP3 the values ??of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 l / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check the fuel system using SDP3, for example, for injector faults. Low engine oil may be a sign of oil leakage.

Remove the flexible pipe coming from the muffler and check if black or white smoke is released when the throttle is opened. White smoke indicates the presence of excess fuel, which may result in the registration of this DTC.

EMS 8324

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature sensor, located after the oxidative catalytic converter, gives an incompatible value when pairwise matching the three sensors. The test is carried out for 60 minutes while driving under load, but not during idling.

The reasons:

Malfunction of temperature sensors T158.

Oil or fuel leak in a silencer.

Malfunction of other sensors.

Notes:

The engine warning light comes on, regeneration is completely blocked.

Elimination:

Compare with SDP3 the values ??of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 l / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

Remove the flexible pipe coming from the muffler and check if black or white smoke is released when the throttle is opened. White smoke indicates the presence of excess fuel, which may result in the registration of this DTC.

To check the quality of the repair, let the engine run under load for 60 minutes.

EMS 8334

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent Dispenser

Fault:

The pressure in the SCR system does not fall as expected when the valve is opened.

The reasons:

The reason may be the freezing or crystallization of the reagent in the pipelines, hoses, the reagent dispenser or the injection nozzle.

Notes:

Reagent injection is turned off.

Elimination:

Check the coolant level. Start the engine and check that the coolant is circulating properly and the reagent suction manifold warms up. Make sure the coolant valve opens fully.

Perform SCR system checks in SDP3.

Verify that the malfunction has been resolved. Using SDP3, execute “Invalidation of DTCs for the NO_x Control System”. This procedure must be carried out outdoors because the exhaust gases are very hot and there is a danger of the melting of the exhaust system.

EMS 8346

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Faulty pressure sensor after throttle.

The reasons:

Faulty pressure sensor after throttle.

Notes:

Reagent injection is turned off.

Elimination:

Turn off and turn on the onboard power supply with the ignition key. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8347

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Unreliable air pressure after throttle.

The reasons:

Unreliable air pressure after throttle.

Notes:

Reagent injection is turned off.

Elimination:

Turn off and turn on the onboard power supply with the ignition key. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8348

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Low air pressure after throttle.

The reasons:

Low air pressure after throttle.

Notes:

Reagent injection is turned off.

Elimination:

Turn off and turn on the onboard power supply with the ignition key. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8348

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off and turn on the ignition with the ignition key. If the DTC remains active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8349

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Turn off and turn on the ignition with the ignition key. If the DTC remains active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8349

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Air pressure sensor after the throttle, high voltage.

The reasons:

Air pressure sensor after the throttle, high voltage.

Notes:

Reagent injection is turned off.

Elimination:

Turn off and turn on the onboard power supply with the ignition key. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8350

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Unreliable air pressure after throttle.

The reasons:

Unreliable air pressure after throttle.

Notes:

Reagent injection is turned off.

Elimination:

Turn off and turn on the onboard power supply with the ignition key. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off and on the power with the ignition key. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8351

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Reagent tank heating

Fault:

Too low a temperature in the reagent tank.

The reasons:

temperature sensor fault in the reagent tank.

Water heating system valve may be stuck in the closed position.

Notes:

The fault affects NOx emissions from a car. The NOx emissions warning lamp comes on and a text message is displayed.

If the car is equipped with an NOx control system, engine torque is reduced by approximately 40%.

The fault code cannot be cleared while the fault is present.

Elimination:

Check reagent tank temperature sensor and its wiring.

Check the water valve of the heating system for binding in the closed position.

To verify that the problem is resolved, follow these steps:

Ensure that the temperature in the reagent tank is above -8 ° C.

Switch off the onboard power using the ignition key. Wait at least 90 seconds and then turn on the power again.

If the fault is resolved, the fault code becomes inactive. Then clear the fault code.

Extinguish the test lamp by turning the ignition key off and on three times. Pause 10 seconds between each cycle.

EMS 8352

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Open reagent vent valve circuit.

The reasons:

Open reagent vent valve circuit.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. As a result of the shutdown, other trouble codes may be generated. Perform diagnostics based on this DTC. To make sure that the communication between the engine control unit and the main SCR unit is working, turn off the power, wait 90 seconds and then turn it on again.

Elimination:

Turn off the onboard power and wait 90 seconds before turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. If the DTC remains active, replace the main unit.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8352

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit or malfunction in the vent valve.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the DTC remains inactive, delete the DTC. If the DTC remains active, replace the vent valve. If the DTC remains inactive, delete the DTC. If the DTC remains active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8355

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8355

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Short circuit on the vent valve.

The reasons:

Short circuit on the vent valve.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC. Communication with the engine control unit can also be interrupted. Restore it by turning off the power with the ignition key, waiting 90 seconds and then turning it on again.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8358

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8361

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also

displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8381

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8381

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Malfunction of the reagent heater main unit.

The reasons:

Electrical malfunction

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. As a result of the shutdown, other trouble codes may be generated. Perform diagnostics based on this DTC. To make sure that the communication between the engine control unit and the main SCR unit is working, turn off the power, wait 90 seconds and then turn it on again.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the onboard power and wait 90 seconds before turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. If the DTC remains active, replace the main unit.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8382

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Malfunction of the reagent heater main unit.

The reasons:

Electrical malfunction

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. As a result of the shutdown, other trouble codes may be generated. Perform diagnostics based on this DTC. To ensure that the communication between the engine control unit and the main SCR unit is working, turn off the power.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the onboard power and wait 90 seconds before turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. If the DTC remains active, replace the main unit.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8384

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Malfunction of the reagent heater main unit.

The reasons:

Electrical malfunction

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. As a result of the shutdown, other trouble codes may be generated. Perform diagnostics based on this DTC. To ensure that the communication between the engine control unit and the main SCR unit is working, turn off the power.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the onboard power and wait 90 seconds before turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. If the DTC remains active, replace the main unit.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8384

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8385

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8385

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Malfunction of the supply voltage circuit of the internal heating system pump of the main unit.

The reasons:

Electrical malfunction

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. As a result of the shutdown, other trouble codes may be generated. Perform diagnostics based on this DTC. To ensure that the communication between the engine control unit and the main SCR unit is working, turn off the power.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the onboard power and wait 90 seconds before turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. If the DTC remains active, replace the main unit.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8388

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Short to battery + in the internal circulation pump.

The reasons:

Short to battery + in the internal circulation pump.

Notes:

The SCR system is deactivated and the injection of the reagent is turned off. When the system is turned off, other trouble codes can be generated. Perform diagnostics based on this DTC. Communication with the engine control unit can also be interrupted. Restore it by turning off the power with the ignition key, waiting 90 seconds and then turning it on again.

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Turn off the power with the key, wait 90 seconds and then turn it on again. If this DTC persists, replace the control unit. Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code. Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8388

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, fault codes 4108, 4106, and 4107 relating to data exchange with the SCR system can also be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, the communication between the SCR control unit and the engine control unit can be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. Try to reestablish the connection, for which you should turn off the ignition, wait 90 seconds and turn on the ignition again.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Switch off the ignition with the key, wait for 90 seconds and then turn it on again with the key. If the fault code becomes inactive, erase the code; If the DTC is still active, replace the main unit.

Continue as follows to ensure that the problem is resolved:

Turn off the ignition with the key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8394

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

Air pressure at current operating conditions is lower than expected.

The reasons:

Leaks in the compressed air line between the main unit and the reagent dispenser.

This fault may be due to a blockage of the air circuit in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check for leaks between the main unit and the reagent dispenser. If there are no leaks, replace the main unit. The

presence of a malfunction in the main unit is not typical. Before replacing the main unit, make sure that the fault was not caused by something else.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

Continue as follows to ensure that the problem is resolved:

There should be no active DTCs for air pressure in the SCR system, for faults in the main unit, for blocking the injection device, or for a temperature sensor downstream of the catalytic converter. Nor should there be an active DTC for leaks in the SCR system.

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NO_x Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. Performing this check may take from 5 to 30 minutes, depending on which DTCs are active.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid.

Start the engine and verify that the engine speed is above 1000 rpm and that the SCR system starts. Perform a road test of 15 minutes on the road. If the temperature is below -8 ° C or the reagent is frozen, the SCR system will not start.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 8394

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Pneumatic circuit SCR

Fault:

Air pressure in SCR system too low.

The reasons:

Leakage in the air line between the main unit and the reagent injection nozzle.

Notes:

No description

Elimination:

Perform a leak test in the air line between the main unit and the reagent injection nozzle.

Perform SCR system checks in SDP3.

Verify that the malfunction has been resolved: With SDP3, perform “Invalidation of DTCs for the NO_x control system”. This procedure must be carried out outdoors because the exhaust gases are very hot and there is a danger of the melting of the exhaust system.

EMS 8426

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

The control unit of the system to reduce toxicity of exhaust gases

Fault:

The exhaust emissions control unit is shutting down too soon.

The reasons:

If the car has a battery ground switch, the cause of the malfunction may be the use of the battery ground switch less than 90 seconds after the key is turned off.

Causes of failure may be the following:

Malfunction in the SCR power supply circuit.

Internal malfunction in the control unit of the exhaust gas reduction system.

If the DTC was generated in conjunction with DTC 5657, the reason probably lies outside the SCR system.

Notes:

The SCR system will not shut down correctly if the control unit is turned off too early. The reagent will still remain in the injection hoses and injectors. At low temperatures there is a risk of damage to the SCR system from ice formation in the hoses.

Elimination:

Switch off the ignition with the ignition key. Wait 90 seconds and then turn on the ignition again.

If the DTC becomes inactive: Clear the DTC.

If the DTC remains active and if DTC 5657 is not generated: The voltage supply to the control unit is checked.

If the fault is in the control unit, replace the control unit.

EMS 8427

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR main unit

Fault:

Power to the main unit turns off too late.

The reasons:

Internal malfunction or fault in the electrical circuit.

Notes:

The power does not turn off, which can lead to a battery discharge.

Elimination:

Check the electrical wiring. If the fault lies in the main unit, it should be replaced.

EMS 8430

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR system

Fault:

The level of nitrogen oxides after the catalytic converter is higher than expected.

The reasons:

The SCR system does not reduce the level of nitrogen oxides. This may be due to a malfunctioning catalytic converter, a malfunctioning NOx sensor, or an inoperative reagent dosing system.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40%. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check for any other trouble codes related to exhaust emissions.

Make sure that the tank contains the correct type of reagent.

Verify that there is no blockage in the injection nozzle or lines.

Check the crystallization in the catalyst or reagent dispenser.

Check the NOx sensors. Do not confuse the sensors before and after the catalytic converter.

Check that the catalytic converter is intact.

In order to ensure that the malfunction has been rectified, in SDP3, recognize the invalidity of the malfunction codes of the NOx control system. Erase the fault code, and select "Reset NOx data" under "Adjustments" in SDP3.

EMS 8448

Blocks:

2098557, 2098556

Title:

Charge air temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

Open circuit in the temperature sensor charge air.

Malfunction in the electrical circuit of the charge air pressure sensor, coolant temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine. Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 8449

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Charge air temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the charge air temperature sensor circuit.

Malfunction in the electrical circuit of the charge air pressure sensor, coolant temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the

sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Make sure that the coolant temperature and the charge air temperature are about the same on a cold engine. Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 8449

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle Actuator

Fault:

The deviation between the requested and measured throttle angle.

The reasons:

Electrical fault, open circuit or short circuit in the electrical circuit.

Notes:

The system can go into fail-safe mode.

Elimination:

Check fuses.

Check wiring and connectors.

Perform the throttle actuator and potentiometer diagnostics.

If the engine is gas driven: Replace the ME7 unit.

EMS 8450

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

Short circuit to + battery, to ground or open the electrical circuit of the actuator throttle.

The reasons:

Short circuit of pin 3 in connector A4.

Notes:

Unable to control throttle.

Elimination:

Check valve block V107 wiring harness and connectors. Measure the resistance in the valve block and check that it meets the specification.

EMS 8450

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 8451

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

Short to battery + in the actuator of the throttle valve.

The reasons:

Short to battery + in the actuator of the throttle valve.

Notes:

As a result of inadvertent actuation, the throttle valve may close. This can lead to loss of engine power and poor handling.

Elimination:

Check valve block V107 wiring harness and connectors. Measure the resistance in the valve block and check that it meets the specification.

EMS 8454

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Throttle Actuator

Fault:

Fuel management has been deactivated due to high temperature, high amperage, or low voltage.

The reasons:

The output stage in ME7 does not work.

Notes:

The engine goes into failsafe mode of operation.

Elimination:

Check fuses.

Replace the ME7 unit.

EMS 8465

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle valve remains open despite the closing request.

The reasons:

Throttle valve stuck open.

Notes:

Throttle valve control is disabled, but an invalidation check is performed for each shutdown.

Elimination:

Ensure that nothing blocks the throttle valve movement. Check for air leaks. Check the throttle position sensor.

EMS 8466

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle valve remains closed despite the request for opening.

The reasons:

Throttle valve stuck closed.

Notes:

Throttle valve control is disabled, but an invalidation check is performed for each shutdown. This can lead to loss of engine power and poor handling.

Elimination:

Ensure that nothing blocks the throttle valve movement. Check the throttle position sensor.

EMS 8481

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The end positions of the position sensor are outside the limits.

The reasons:

Position Sensor Malfunction

Notes:

Unable to adjust throttle valve.

Elimination:

Check the supply voltage to the valve block and the position sensor. Check wiring and connectors. Check throttle valve function.

EMS 8482

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle position sensor, potentiometer 1, indicates an incorrect position.

The reasons:

Short to ground or open circuit.

Notes:

Maximum engine torque is limited.

The control unit uses a wildcard value.

Elimination:

Check fuses.

Check whether there is a short circuit of potentiometer 1 to ground.

Check throttle valve function.

Replace throttle valve assembly.

Replace the ME7 control unit.

EMS 8483

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle position sensor, potentiometer 1, indicates an excessively high voltage.

The reasons:

Short to battery “+” in potentiometer 1.

Notes:

Maximum engine torque is limited.

The control unit uses a wildcard value.

Elimination:

Check fuses.

Check for a short circuit on the throttle valve potentiometers to the battery voltage.

Check throttle valve function.

Replace throttle valve assembly.

Replace the ME7 control unit.

EMS 8487

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle position sensor, potentiometer 2, indicates an incorrect position.

The reasons:

Short to ground or open circuit.

Notes:

Maximum engine torque is limited.

The control unit uses a wildcard value.

Elimination:

Check fuses.

Check for throttle valve potentiometers short circuit to earth.

Check throttle valve function.

Replace throttle valve assembly.

Replace the ME7 control unit.

EMS 8488

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The throttle position sensor, potentiometer 2, indicates an excessively high voltage.

The reasons:

Short to battery “+” in potentiometer 2.

Notes:

Maximum engine torque is limited.

The control unit uses a wildcard value.

Elimination:

Check fuses.

Check for throttle valve potentiometers short circuit to earth.

Check throttle valve function.

Replace throttle valve assembly.

Replace the ME7 control unit.

EMS 8504

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Throttle valve

Fault:

The discrepancy between the two potentiometers of the throttle position sensor.

The reasons:

Malfunction of one or both potentiometers.

Notes:

May cause the engine to stop or activate the emergency mode.

Elimination:

Check fuses.

Check the supply voltage to the throttle valve potentiometers and to the valve block.

Check wiring and connectors.

Check throttle valve function.

Replace throttle valve assembly.

Replace the ME7 control unit.

EMS 8567

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda regulation

Fault:

Lambda control has fallen below the minimum permissible limit value.

The reasons:

Air / fuel mixture too lean.

Possible reasons:

Gas supply not working.

Indications of mass air flow and fuel injection wrong.

Malfunction in one or more nozzles.

Notes:

Fault condition can be compensated to some extent by lambda control.

There is a risk of misfire.

Elimination:

Check the gas supply and injectors.

EMS 8568

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Lambda regulation

Fault:

Lambda control has exceeded the maximum permissible limit value.

The reasons:

Air / fuel mixture too lean.

Possible reasons:

Gas supply not working.

Indications of mass air flow and fuel injection wrong.

Malfunction in one or more nozzles.

Notes:

Fault condition can be compensated to some extent by lambda control.

There is a risk of misfire.

Elimination:

Check the gas supply and injectors.

EMS 8583

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas mixture

Fault:

The engine management system registered by means of Lambda regulation too much air in the gas mixture.

The reasons:

The readings of the mass air flow sensor are incorrect.

Air leak in intake manifold

Gas supply is unsatisfactory

Notes:

Fault condition can be compensated to some extent by lambda control.

There is a risk of misfire.

Elimination:

Completely check the gas and air supply systems.

EMS 8584

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Gas mixture

Fault:

The engine management system registered, by means of Lambda regulation, too little air in the gas mixture.

The reasons:

The readings of the mass air flow sensor are incorrect.

Air filter clogged

Gas supply is unsatisfactory

Notes:

Fault condition can be compensated to some extent by lambda control.

There is a risk of misfire.

Elimination:

Completely check the gas and air supply systems.

EMS 8704

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901

Title:

SCR – NOx sensor after catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor indicating that there is a break in the electrical circuit.

The reasons:

An open circuit in the NOx sensor circuit

Notes:

Functions in the SCR system are not affected.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8704

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Boost pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open circuit in the charge air pressure sensor circuit.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active. The engine also responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, "roughly", using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 8705

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Boost pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit of the charge air pressure sensor circuit.

Closed intake system.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active. The engine also responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, "roughly", using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits. Clear the DTC memory and check if the fault persists.

If the DTC remains active, check to see if the intake system is blocked by ice or foreign particles.

Also make sure that the connecting pipes are intact and not compressed.

EMS 8705

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

The signal from the NOx sensor does not change as prescribed.

The reasons:

Malfunction or incorrect installation of the NOx sensor.

Notes:

No description

Elimination:

Check that the NOx sensor is installed correctly and, if necessary, replace the NOx sensor.

You can use the following options to verify that the malfunction has been resolved: To verify that you have corrected the malfunction, you can run the “Recognize the DTCs for NOx Validation” test, which is located on the “Checks” tab in SDP3. The test takes approximately 30 minutes and should be performed outdoors.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid. Perform a road test of the car and check if the engine and catalytic converter are warm. The NOx sensor is activated when the temperature rises above 120 ° C. The invalidation test starts 5 minutes after the activation of the NOx sensor.

For vehicles with NOx control

To verify troubleshooting:

Perform the “Recognize NOx Control DTCs” test or perform a road test as described above.

If the fault is resolved, the fault code becomes inactive.

EMS 8706

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor after catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor stating that there is a short in the circuit.

The reasons:

Short circuit in the NOx sensor electrical circuit.

Notes:

Functions in the SCR system are not affected.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8706

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value. The engine also responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. Therefore, the control unit will only control the composition of EGR gases roughly, "roughly", using predefined values ??to set the position of the EGR valve. Mass flow meter calibration disabled.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 8707

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Charge air pressure

Fault:

The voltage from the charge-air pressure sensor was implausible compared with other pressure sensors, or there was an improbable pressure change in accordance with current operating conditions.

The reasons:

Possible reasons:

The intake system is blocked or leaking.

The charge air pressure sensor may be blocked with oil.

Malfunction in the turbocharger.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air temperature sensor, fuel line pressure sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If a fault occurs, the control unit uses a pre-programmed value. The engine responds to the activation of fuel management more slowly than it should be. This is a consequence of the malfunction of the exhaust limiter.

In the case of engines with EGR, the engine works with EGR, but without any feedback through the mass flow sensor. This means that the control unit provides only rudimentary regulation of the EGR concentration using the preset values for the position of the EGR valve. Calibration of the mass flow sensor is turned off.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits. Clear the DTC memory and check if the fault persists.

If the fault persists, make sure that there is no leakage in the intake system and that it is not blocked, for example, with ice or mud.

Also make sure that the connecting pipes are intact and not compressed.

Check the turbocharger.

EMS 8723

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

NOx sensor open circuit in front of the catalytic converter.

The reasons:

NOx sensor open circuit in front of the catalytic converter.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40% after 36 hours. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8723

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor in front of the catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor indicating that there is a break in the electrical circuit.

The reasons:

An open circuit in the NOx sensor circuit

Notes:

Functions in the SCR system are not affected.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8724

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

NOx sensor malfunction after catalytic converter.

The reasons:

Sensor defective or installed in wrong position.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40% after 36 hours. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Ensure that the NOx sensor is in the correct position and, if so, replace the sensor.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8725

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

NOx sensor

Fault:

Short circuit NOx sensor in front of the catalytic converter.

The reasons:

Short circuit in the NOx sensor electrical circuit.

Notes:

The fault affects the emissions of nitrogen oxides by the engine. NOx warning lamp is on. On engines with a NOx control system, engine torque is reduced by 40% after 36 hours. An active DTC cannot be deleted using SDP3. The following repair operations with the control unit must confirm the repair of the fault.

Elimination:

Check the electrical components, electrical connectors and wiring.

Make sure the problem is resolved by turning off the power with the ignition key, waiting 90 seconds and then turning it on again. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Turn off and turn on the power three times at intervals of 10 seconds to deactivate the test lamp.

EMS 8725

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor in front of the catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor indicating that there is a break in the electrical circuit.

The reasons:

An open circuit in the NOx sensor circuit

Notes:

Functions in the SCR system are not affected.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the electrical components, electrical connectors and wiring.

Continue as follows to ensure that the problem is resolved:

Turn off the power with the ignition key, wait at least 90 seconds and then turn it on again with the key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 8742

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Atmospheric pressure sensor

Fault:

The atmospheric pressure sensor gives an incorrect signal.

The reasons:

There is a malfunction in the atmospheric pressure sensor.

Notes:

On vehicles with NOx emissions control, engine torque is reduced if this DTC remains active for 36 hours.

Elimination:

The atmospheric pressure sensor is connected to the coordinator. Read the trouble codes for the coordinator and follow the instructions given here.

EMS 8802

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Charge air pressure

Fault:

Charge air pressure too low.

The reasons:

Possible reasons:

Leakage in the charge air system.
Faulty charge air pressure sensor.
Turbocharger malfunction.

Notes:

Engine torque is reduced.

There is a danger of smoking.

Elimination:

Check the charge air system for leaks.
Check the charge air pressure sensor.
Check the turbocharger.

If the operating time since the generation of the fault code exceeds 10 hours, empty the EGR cooler, as there is a danger of condensation in the air-cooled EGR cooler after the EGR system is turned off. Empty the EGR cooler following the instructions given in the manual for service stations, subgroup 01-65.

EMS 8960

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Oil temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

An open circuit in the oil temperature sensor circuit

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Ensure that the oil temperature and the coolant temperature are about the same when the engine is cold.
Check the electrical components, electrical connectors and wiring.

EMS 8961

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Oil temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Short circuit in the circuit of the oil temperature sensor

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Ensure that the oil temperature and the coolant temperature are about the same when the engine is cold.
Check the electrical components, electrical connectors and wiring.

EMS 8962

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 9216

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Oil pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the oil pressure sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the mass flow sensor.

Notes:

An oil pressure sensor, a fuel temperature sensor, and a mass flow sensor have a shared supply voltage. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument panel shows 0 bar regardless of engine speed. The visual alarm emergency oil pressure is not included.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 9217

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Oil pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the oil pressure sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the mass flow sensor.

Notes:

An oil pressure sensor, a fuel temperature sensor, and a mass flow sensor have a shared supply voltage. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument panel shows 0 bar regardless of engine speed. The visual alarm emergency oil pressure is not included.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 9218

Blocks:

2098557, 2098556, 2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument panel shows 0 bar regardless of engine speed. The visual alarm emergency oil pressure is not included.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 9219

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Oil pressure sensor

Fault:

The voltage level from the sensor was implausible compared to the level that must be available for the current engine speed.

The reasons:

The cause of this DTC may be electrical or mechanical failure.

Electrical faults can be caused by damage to the wiring or sensor failure. There may also be a fault in the electrical circuit of the fuel temperature sensor or the electrical circuit of the mass flow sensor.

Mechanical faults associated with the lubrication system. The cause of low oil pressure can be, for example:

low oil level

plugged oil filter.

fuel ingress

open valve sticking

gasket damage

oil pump or suction strainer malfunction

The cause of high oil pressure can be, for example:

oil channel blockage

abnormal oil viscosity

piston cooling valve or safety valve could stop in closed position

Notes:

An oil pressure sensor, a fuel temperature sensor, and a mass flow sensor have a shared supply voltage. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

The oil pressure gauge on the instrument cluster shows the current oil pressure (even if it is implausible), regardless of the engine speed.

The control lamp for oil pressure is turned on only when the pressure becomes so low that it falls below the limit value for switching on this lamp.

Elimination:

Start by checking the oil level and oil filter. Then check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits. Finally, check the lubrication system and its components.

EMS 9251

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The fuel injected does not provide the intended temperature rise at the DOC oxidation catalyst.

The reasons:

The oxidative catalytic converter is missing, defective or worn. Rapid wear may occur due to the use of high-sulfur fuels.

Malfunction of exhaust gas temperature sensors T158.

Malfunction of other sensors.

Notes:

The engine warning light comes on, regeneration is completely blocked.

Elimination:

Check the EMS and EEC fault codes associated with the sensor malfunction and make the necessary repairs.

Check for damage in the exhaust pipe between the engine and the silencer, which may cause leaks.

Check that there is no damage to the oxidation catalytic converter, see the description of the procedure "Removing the filter".

To verify the effectiveness of the repair, perform a service regeneration procedure using SDP3. The temperature in the exhaust system is very high, it can reach 500 ° C.

EMS 9259

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

The temperature sensor, located after the diesel particulate filter (DPF), gives an incompatible value when pairing the three sensors. The test is carried out for 60 minutes while driving under load, but not during idling.

The reasons:

Malfunction of temperature sensors T158.

Oil or fuel leak in a silencer.

Malfunction of other sensors.

Notes:

The engine warning light comes on, regeneration is completely blocked.

Elimination:

Compare with SDP3 the values of the temperature sensors (T158) taken from the muffler or at high idle, PTO 1000 1 / min. After the end of the stabilization period, all three sensors should produce similar values. If not, replace the appropriate item.

Check for signs of leakage of oil and fuel in the exhaust pipe, between the engine and the muffler. Check with SDP3 the condition of the fuel system, in particular, possible injector malfunctions. A low engine oil level may indicate an oil leak.

Remove the flexible pipe coming from the muffler and check if black or white smoke is released when the throttle is opened. White smoke indicates the presence of excess fuel, which may result in the registration of this DTC.

To check the quality of the repair, let the engine run under load for 60 minutes.

EMS 9263

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Increased pressure in the particulate filter.

The reasons:

The particulate filter is clogged with soot. This is probably due to the fact that the car was operated with a small load for a long time.

Notes:

If soot is present in the particulate filter, fuel consumption increases.

A large amount of soot causes an increase in engine noise, a deterioration in acceleration at high loads, and an increase in the risk of engine failure.

Elimination:

Clean the filter by driving the vehicle at high speed and with a high load for 15 minutes – 1 hour. If the DTC persists, the filter should be replaced.

EMS 9291

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Significant pressure drop in the particulate filter.

The reasons:

High levels of soot or soot in the particulate filter. The filter may be damaged or blocked by foreign objects.

Damage to the muffler or connecting elements.

Malfunction of differential pressure sensor.

Malfunction of temperature sensor T158 or sensors of other systems.

Notes:

The engine warning light is on, regeneration of the filter is completely blocked.

Active limiting motor torque.

Elimination:

Check for the presence of DTCs related to the sensors in the EMS engine management system or in the EEC3 exhaust gas after-treatment system and carry out the necessary repairs.

Check for the presence of DTCs related to the high soot level in the particulate filter and perform the necessary repairs.

Check for damage and blockage to the differential pressure sensor.

Check for the presence of a particulate filter, make sure that it is not damaged, not overflowed with soot or soot.

If the filter is damaged or overfilled, it must be replaced.

To check the quality of the repair, let the engine run under load for 30 minutes.

EMS 9298

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Particulate filter, differential pressure sensor

Fault:

The engine control unit received incorrect data from the differential pressure sensor.

The reasons:

Possible malfunctions – malfunction of the differential pressure sensor or an open circuit in the wires or connectors.

Notes:

This malfunction may lead to an increase in soot particulate emissions.

Elimination:

Check the differential pressure sensor, electrical connectors and wiring.

EMS 9299

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Particulate filter

Fault:

The difference in pressure at the inlet and outlet of the particulate filter indicates a value below normal.

The reasons:

A malfunction has occurred due to the absence of a particulate filter in the muffler or the differential pressure sensor gives incorrect readings.

Notes:

No description

Elimination:

Check whether there is a particulate filter in the silencer.
Check the differential pressure sensor.
Check that the differential pressure sensor is properly connected to the mains.
Check for signal from the sensor.
Check exhaust system.
Particulate filter check

EMS 9300

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Differential pressure sensor for particulate filter

Fault:

The signal from the differential pressure sensor showed a value that is lower than 0.1 V.

The reasons:

Short circuit in the differential pressure sensor circuit.

Notes:

No description

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9301

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116, 2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Differential pressure sensor for particulate filter

Fault:

The signal from the differential pressure sensor showed a value that exceeds 4.9 V.

The reasons:

Short circuit in the differential pressure sensor circuit.

Notes:

No description

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9306

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR, bypass valve

Fault:

Overflow valve not working.

The reasons:

A break in the relief valve circuit.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the bypass valve as well as the electrical connectors and wiring.

EMS 9307

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR, bypass valve

Fault:

One or more faults in the EGR bypass valve.

The reasons:

Possible malfunctions – a malfunction of the overflow valve or an open circuit in the wires or connectors.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Perform a general troubleshooting procedure for this item. If other trouble codes are generated, first troubleshoot them.

EMS 9308

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR, bypass valve

Fault:

The voltage in the circuit was out of range.

The reasons:

An open or short to ground in the electrical circuit of the relief valve.

Notes:

The engine control unit shuts off the EGR system and reduces engine power.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9309

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

EGR, bypass valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open circuit or short circuit to + battery in the overflow valve electrical circuit.

Notes:

The engine control unit turns off the EGR system and the engine power decreases.

The fault code cannot be cleared while the fault is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9315

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Particulate filter

Fault:

Increased pressure in the particulate filter.

The reasons:

The particulate filter is clogged with soot. This is probably due to the fact that the car was operated with a small load for a long time.

Notes:

If soot is present in the particulate filter, fuel consumption increases.

A large amount of soot causes an increase in engine noise, a deterioration in acceleration at high loads, and an increase in the risk of engine failure.

Elimination:

Clean the filter by driving the vehicle at high speed and with a high load for 15 minutes – 1 hour. If the DTC persists, the filter should be replaced.

EMS 9317

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Particulate filter

Fault:

Significant pressure drop in the particulate filter.

The reasons:

High levels of soot or soot in the particulate filter. The filter may be damaged or blocked by foreign objects.
Damage to the muffler or connecting elements.

Malfunction of differential pressure sensor.

Malfunction of temperature sensor T158 or sensors of other systems.

Notes:

The engine warning light is on, regeneration of the filter is completely blocked.

Active limiting motor torque.

Elimination:

Check for the presence of DTCs related to the sensors in the EMS engine management system or in the EEC3 exhaust gas after-treatment system and carry out the necessary repairs.

Check for the presence of DTCs related to the high soot level in the particulate filter and perform the necessary repairs.

Check for damage and blockage to the differential pressure sensor.

Check for the presence of a particulate filter, make sure that it is not damaged, not overflowed with soot or soot. If the filter is damaged or overfilled, it must be replaced.

To check the quality of repair, let the engine run under light load for 30 minutes.

EMS 9482

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil level sensor

Fault:

Malfunction oil level sensor.

The reasons:

The malfunction may be due to the fact that several different faults occur simultaneously in the oil level sensor.

Notes:

The instrument panel does not show oil level or oil pressure. The control lamp of pressure of oil does not join.

Elimination:

Check the oil level sensor, electrical connectors and wiring.

EMS 9484

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil level sensor

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

Short to ground or open circuit.

Notes:

The instrument panel does not show oil level or oil pressure. The control lamp of pressure of oil does not join.

Elimination:

Check the oil level sensor, electrical connectors and wiring.

EMS 9485

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Oil level sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short circuit to + battery or open circuit.

Notes:

The instrument panel does not show oil level or oil pressure. The control lamp of pressure of oil does not join.

Elimination:

Check the oil level sensor, electrical connectors and wiring.

EMS 9497

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coil Electromagnetic Clutch Air Conditioning Compressor

Fault:

Break of the electric circuit of the electromagnetic clutch of the air conditioning compressor clutch.

The reasons:

Malfunction in electrical wiring or electrical circuit connectors.

Notes:

A fault code can be generated when the air conditioning system is activated. The A / C compressor cannot be turned on while the fault is active.

Elimination:

Check the electrical components, electrical connectors and wiring. Measure the resistance of the coupling winding.

EMS 9504

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coil Electromagnetic Clutch Air Conditioning Compressor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground in the power supply wiring of the electromagnetic clutch of the air conditioning compressor clutch.

Notes:

A fault code can be generated when the air conditioning system is activated. The A / C compressor cannot be turned on while the fault is active.

Elimination:

Check the electrical components, electrical connectors and wiring. Measure the resistance of the coupling winding.

EMS 9505

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coil Electromagnetic Clutch Air Conditioning Compressor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short to battery + in the electrical circuit of the winding of the electromagnetic clutch of the air conditioning compressor.

Notes:

It is not possible to control the winding of the electromagnetic clutch of the air conditioning system compressor until the fault is rectified.

The air conditioning compressor may start unexpectedly.

Elimination:

Check the electrical components, electrical connectors and wiring. Measure the resistance of the coupling winding.

EMS 9558

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant level sensor.

Fault:

The voltage in the coolant level sensor circuit was too high.

The reasons:

Short circuit to + battery or open circuit.

Notes:

No description

Elimination:

Check electrical wiring and connectors.

EMS 9560

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant level sensor.

Fault:

The voltage in the coolant level sensor electrical circuit was too low.

The reasons:

Short to ground.

Notes:

No description

Elimination:

Check electrical wiring and connectors.

EMS 9568

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Coolant level

Fault:

The coolant level sensor sent a signal to the engine control unit indicating that the coolant level is too low.

The reasons:

Coolant level too low.

Notes:

No description

Elimination:

Check the coolant level.

EMS 9592

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, speed sensor T120

Fault:

Induced sensor voltage too low.

The reasons:

An open circuit. The sensor is in the wrong position.

Notes:

Engine power is reduced to protect the turbocharger from damage. The turbocharger's annular nozzle moves to a safe position.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9593

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, speed sensor 1

Fault:

Malfunction in the turbine speed sensor.

The reasons:

The malfunction may be due to the fact that several different faults occur simultaneously in the element.

Notes:

Engine power is reduced to protect the turbocharger from damage.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9600

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, speed sensor 1

Fault:

The voltage in the circuit was below acceptable levels.

The reasons:

Short to ground.

Notes:

Engine power is reduced to protect the turbocharger from damage.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9601

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Turbocharger, speed sensor 1

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Short to battery +.

Notes:

Engine power is reduced to protect the turbocharger from damage.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9728

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

Short circuit on the “+” battery of one of the sensors with common power. It can be one of the following sensors: Oil pressure sensor, mass flow sensor or fuel temperature sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 9729

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is below the set value.

The reasons:

A short to ground on one of the sensors with common power. It can be one of the following sensors: Oil pressure sensor, mass flow sensor or fuel temperature sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 9729

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant pump.

Fault:

Malfunction of the coolant pump.

The reasons:

The cause of the malfunction is an element having several faults at the same time.

Notes:

The fan speed sensor and the coolant pump have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 9730

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant pump.

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Possible reasons:

Short circuit to + battery ground wire; open circuit or short to ground in the power wire of the coolant pump electrical circuit.

Malfunction in the fan speed sensor circuit.

Notes:

The coolant pump is running until it is turned off.

The fan speed sensor and the coolant pump have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

Elimination:

Check fan speed sensor and coolant pump with connectors and electrical wiring.

Measure the resistance of the coolant pump electrical circuit.

EMS 9731

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Coolant pump.

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Possible reasons:

Short to power + battery wires in the electrical circuit of the coolant pump.

Malfunction in the fan speed sensor circuit.

Notes:

The coolant pump is not activated and the cooling efficiency remains low as long as the fault is present.

The fan speed sensor and the coolant pump have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

Elimination:

Check fan speed sensor and coolant pump with connectors and electrical wiring.

Measure the resistance of the coolant pump electrical circuit.

EMS 9984

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

One of the common-power sensors has a short to battery. This may be one of the following sensors: Coolant temperature sensor, charge air temperature sensor, charge air pressure sensor, fuel line pressure sensor, or fan speed sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 9985

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Power supply

Fault:

The voltage of one of the sensors having a common power is below the set value.

The reasons:

One of the sensors with a common power supply has a short circuit between the power supply circuit of the sensor and the mass point of the sensor. This may be one of the following sensors: Coolant temperature sensor, charge air temperature sensor, charge air pressure sensor, fuel line pressure sensor, or fan speed sensor.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check sensors, connectors and wiring.

EMS 10240

Blocks:

2098557, 2098556

Title:

Additional analog input

Fault:

The signal level in the circuit exceeded the permissible level.

The reasons:

Malfunction in the coolant temperature sensor circuit, charge air pressure sensor, charge air temperature sensor, or an additional analog input circuit.

Notes:

It is not possible to use a throttle control unit connected to an additional analog input.

The coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and an additional analog input have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

Elimination:

Check the throttle control unit and voltage levels connected to the analog input. Voltage levels must be greater than the values specified in the engine control unit.

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor and the element connected to the auxiliary analog input, and connectors and electrical wires in the electrical circuit.

EMS 10241

Blocks:

2098557, 2098556

Title:

Additional analog input

Fault:

The signal level in the circuit is below the allowed limit.

The reasons:

Possible reasons:

Short circuit of additional analog input circuit.

Malfunction in the electrical circuit of the coolant temperature sensor, charge air pressure sensor or charge air temperature sensor.

Notes:

The coolant temperature sensor, charge air pressure sensor, charge air temperature sensor and an additional analog input have a common power supply. In the event of a fault in one of the elements, it may affect the electrical circuits of other elements.

It is not possible to use a throttle control unit connected to an additional analog input.

Elimination:

Check the throttle control unit and voltage levels connected to the analog input. Voltage levels must not be less than the values specified in the engine control unit.

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor and the element connected to the auxiliary analog input, and connectors and electrical wires in the electrical circuit.

EMS 10242

Blocks:

2098557, 2098556

Title:

Control block

Fault:

The control unit was unable to convert the signals from the additional analog input.

The reasons:

Internal malfunction in the control unit.

Notes:

It is not possible to use a throttle control unit connected to an additional analog input.

Elimination:

Clear the DTC memory and start the engine. If this DTC is generated again, replace the control unit.

EMS 10496

Blocks:

2110163, 2110160

Title:

Mass flow meter

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An electrical break in the mass flow sensor circuit.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

An oil pressure sensor, a fuel temperature sensor, and a mass flow sensor have a shared supply voltage. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The engine will work with exhaust gas recirculation, but without feedback on the mass flow sensor signal. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is disabled.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 10497

Blocks:

2110163, 2110160

Title:

Mass flow meter

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the electrical circuit of the mass flow sensor.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

An oil pressure sensor, a fuel temperature sensor, and a mass flow sensor have a shared supply voltage. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The engine will work with exhaust gas recirculation, but without feedback on the mass flow sensor signal. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve. Calibration of the mass flow sensor is disabled.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 10498

Blocks:

2110163, 2110160

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

The engine will work with exhaust gas recirculation, but without feedback on the signal from the mass flow sensor of the recycled exhaust gas. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values to set the position of the EGR valve. Mass flow meter calibration disabled.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 11175

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Information code for NOx control – cannot be deleted

Fault:

Empty reagent tank. This DTC is generated when there is one or more faults in the NOx control system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

Review other active fault codes for NOx control.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

If the DTC remains active for 36 hours, engine power is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

If an active DTC is present: Perform the necessary actions to eliminate the causes of other active DTCs.

If the DTC is inactive: No action should be taken.

EMS 11175

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC does not indicate any malfunction. It is intended only to inform the authorities, and should not be used for troubleshooting.

The reasons:

A malfunction code indicates that there were faults in the vehicle that affect the release of nitrogen oxides (NOx). This information is required to meet the requirements of legislation regarding the control of NOx emissions.

This DTC indicates that the control unit has generated DTCs related to the level of reagent in the tank.

Notes:

DTC cannot be cleared.

The fault code is automatically deleted if the fault did not occur within 400 days.

Elimination:

No action required.

EMS 11176

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC does not indicate any malfunction. It is intended only to inform the authorities, and should not be used for troubleshooting.

The reasons:

A malfunction code indicates that there were faults in the vehicle that affect the release of nitrogen oxides

(NOx). This information is required to meet the requirements of legislation regarding the control of NOx emissions.

This DTC indicates that the control unit has generated DTCs for the SCR system.

Notes:

DTC cannot be cleared.

The fault code is automatically deleted if the fault did not occur within 400 days.

Elimination:

No action required.

EMS 11176

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

Information code for NOx control – cannot be deleted

Fault:

Break in the electrical circuit of the reagent injection system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

The fault codes in the SCR system caused an open circuit in the reagent injection system.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

Engine torque is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

No action required.

EMS 11179

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC is generated when there is one or more faults in the NOx control system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

Review other active fault codes for NOx control.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

If the DTC remains active for 36 hours, engine power is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

If an active DTC is present: Perform the necessary actions to eliminate the causes of other active DTCs.

If the DTC is inactive: No action should be taken.

EMS 11180

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116,9000000, 2089202, 2089201, 2089200

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC is generated when there is one or more faults in the NOx control system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

Review other active fault codes for NOx control.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

If the DTC remains active for 36 hours, engine power is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

If an active DTC is present: Perform the necessary actions to eliminate the causes of other active DTCs.

If the DTC is inactive: No action should be taken.

EMS 11181

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC is generated when there is one or more faults in the NOx control system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

Review other active fault codes for NOx control.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

If the DTC remains active for 36 hours, engine power is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

If an active DTC is present: Perform the necessary actions to eliminate the causes of other active DTCs.

If the DTC is inactive: No action should be taken.

EMS 11182

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Information code for NOx control – cannot be deleted

Fault:

This DTC is generated when there is one or more faults in the NOx control system.

This DTC is used by authorized agencies to see if the NOx control system has been activated, and is not used in car repairs.

The reasons:

There is a fault in the elements used to measure NOx emissions in the car.

Notes:

When the engine management system detects a fault, the NOx warning lamp comes on.

If the DTC remains active for 36 hours, engine power is reduced by 40%.

DTC cannot be cleared. It disappears if it remains inactive for 400 days or 9600 hours.

Elimination:

If an active DTC is present: Perform the necessary actions to eliminate the causes of other active DTCs.

If the DTC is inactive: No action should be taken.

EMS 12550

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pedal positions

Fault:

The engine control unit and the coordinator receive unmatched data on the position of the accelerator pedal.

The reasons:

Internal malfunction in the control unit.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed.

Elimination:

Check the coordinator block for fault codes pertaining to the accelerator pedal. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC remains active, replace the coordinator. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC remains active, replace the engine control unit.

EMS 12551

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pedal positions

Fault:

Constantly turned on switch “kickdown” (accelerator pedal is not in the extreme position).

The reasons:

Internal malfunction in the control unit.

Notes:

If this DTC is stored in memory, the activation of the kickdown is ignored.

Elimination:

Check the coordinator block for fault codes pertaining to the accelerator pedal. Erase the trouble codes from the memory and test drive the car. During the trip, depress the accelerator pedal as far as it will go.

If the DTC remains active, replace the coordinator. Erase the trouble codes from the memory and test drive the car. During the trip, depress the accelerator pedal as far as it will go.

If the DTC remains active, replace the engine control unit.

EMS 12800

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value. It was 47 V or more for 0.2 seconds.

The reasons:

This may be caused by the work start-charger.

Notes:

If the speed is not recorded, the engine stops immediately without a delay. If the engine is recording the engine speed, the engine will continue to idle for 5 minutes. After that, the engine will stop.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 12801

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Battery voltage

Fault:

Battery voltage was below acceptable value. It was 9 volts or less for 0.2 seconds.

The reasons:

The fault may occur during a cold start, if the battery is in poor condition.

Notes:

Under reduced voltage can be observed difficult start the engine.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 12802

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

The control unit could not convert the battery voltage signal.

The reasons:

Internal malfunction in the control unit.

Notes:

As long as the fault is present, the preprogrammed value is used.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 12804

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Battery voltage

Fault:

The battery voltage was above the allowable value. Within 5 seconds, the battery voltage was more than 30.56 V.

The reasons:

The failure of the generator can be, for example, an increase in the voltage of the on-board network to 36 V.

Notes:

If the voltage at the terminals of the battery for 15 minutes will be in the range of 30.56 ... 47 V, the engine will automatically go into idle mode.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 12805

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Battery voltage

Fault:

Battery voltage was below acceptable value. For 5 seconds, the battery voltage was in the range of 9 ... 21.44 V.

The reasons:

It is possible that this fault is caused by a defective alternator or battery circuit. It is also possible that the power of simultaneously enabled consumers is too high.

Notes:

A crankshaft speed of less than 400 rpm during engine start is not considered a malfunction.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 13056

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Contact with coordinator

Fault:

The engine control unit does not receive from the coordinator unit messages about the current position of the accelerator pedal, the braking system, the inclusion of the starter and air conditioning, the operation of the torque limiting system and other systems.

The reasons:

Lost communication between engine control unit and coordinator.

If the DTC was generated only once, this may be due to the interruption of the supply of voltage to the coordinator while maintaining the supply of voltage to the engine control unit. If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If fault code 16384 was generated at the same time, there may be a fault in the engine control unit. If this fault code was generated and fault code 16384 is not, it is possible that there is a fault in the wiring.

Notes:

The inability to start the engine while there is a malfunction.

If this malfunction occurs when the engine is running, pressing the accelerator pedal is ignored. The car can continue driving at minimum speed.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 13058

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Contact with coordinator

Fault:

The engine control unit does not receive information from the coordinator regarding the tachograph.

The reasons:

Lost communication between engine control unit and coordinator.

If the DTC was generated only once, this may be due to the interruption of the supply of voltage to the coordinator while maintaining the supply of voltage to the engine control unit. This may be due to the replacement of a coordinator or tachograph.

If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If this fault code was generated and fault code 16384 is not, it is possible that there is a fault in the wiring. If fault code 16384 was generated at the same time, there may be a fault in the engine control unit.

Notes:

As a result of this fault, the vehicle speed is set at 15 km / h. In this case, cruise control and engine power take-off equipment do not work.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 13059

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Contact with coordinator

Fault:

The engine control unit does not receive from the coordinator unit any messages about the braking system, cruise control, clutch and other systems.

The reasons:

Lost communication between engine control unit and coordinator.

If the fault code was generated only once, this may be due to the replacement of the coordinator.

If fault code 16384 is simultaneously generated, replace the control unit.

If this DTC is generated, and DTC 16384 is not, there may be a problem with the wiring or loose connections.

If a fault code is generated frequently, it is possible that the wiring is faulty or the connectors of the brake system or cruise control switches are loose.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard

power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 13315

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Incorrect CAN version

Fault:

The coordinator and engine control unit do not agree on which CAN version is used.

The reasons:

A malfunction occurs if the engine control unit or coordinator has been replaced and is not compatible with each other.

Notes:

A fault causes the starter to lock.

Elimination:

Check the engine control unit and coordinator spare part numbers. Replace the control unit with the wrong part number.

EMS 16384

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed. At the same time, engine speed, coolant temperature and oil pressure are not displayed on the instrument panel.

In case of this fault, the engine cannot be started.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in the engine killing mode, the control unit performs a functional check of the components after the ignition is turned off.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 16640

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

System shutdown

Fault:

The control unit was interrupted before it finished the shutdown test.

The reasons:

The power to the engine control unit was turned off prematurely. This could be due to an incorrect engine stopping procedure with the ignition key or the engine being stopped using the ground switch. The supply voltage can be interrupted if additional equipment is connected to the consumer.

Notes:

When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed). This fault also leads to a longer engine start.

It is considered that the malfunction is rectified as soon as the control unit completes the shutdown test without interruption.

The active DTC cannot be cleared until the shutdown check is completed successfully.

Elimination:

Always turn off the engine with the ignition key. Make sure that the indicator turns on briefly after the system is de-energized with the ignition key. If the main battery switch is present, it should not be turned off until the test lamp is turned off.

Make sure that there is no additional equipment that interferes with the power supply.

EMS 16641

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Data transfer to the control unit has been interrupted.

The reasons:

This malfunction may occur if the control unit supply voltage is too low or if the control unit itself malfunctions. If the car has a battery mass switch in the cab (used in buses and ADR cars), a fault code can be generated if the battery mass switch is used immediately after the ignition is turned off.

Notes:

A malfunction code may lead to a longer engine start.

This DTC may also generate DTC 65527.

Elimination:

Check the battery and alternator.

Clear the memory of trouble codes, and then turn off and turn on the ignition with the key.

If this DTC is generated again, replace the control unit.

EMS 16642

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Incorrect or unreliable data.

Notes:

A malfunction code may lead to a longer engine start.

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 16896

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Incorrect or unreliable data.

Notes:

If several fault codes are stored in the memory at once, then you should check whether this trouble code has also been recorded in the memory. As a result of this fault, the control unit cannot convert signals from pressure and temperature sensors, as well as other sensors, as a result of which fault codes of all these elements are recorded.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

Elimination:

If this DTC has been recorded into the memory of the control unit only once, erase the DTC from the memory, then turn off the ignition with the ignition key and then turn it on again. If this DTC is generated again, replace the control unit.

If this DTC has been generated several times, replace the control unit.

EMS 16897

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Incorrect or unreliable data.

Notes:

If several fault codes are stored in the memory at once, then you should check whether this trouble code has also been recorded in the memory. As a result of this fault, the control unit cannot convert signals from pressure and temperature sensors, as well as other sensors, as a result of which fault codes of all these elements are recorded.

If the control unit starts working normally again, then in order for this code not to be considered as active, it is necessary to perform a check in the engine stop mode. When checking in engine kill mode, the control unit performs a functional check of the components after the ignition is turned off.

Elimination:

If this DTC has been recorded into the memory of the control unit only once, erase the DTC from the memory, then turn off the ignition with the ignition key and then turn it on again. If this DTC is generated again, replace the control unit.

If this DTC has been generated several times, replace the control unit.

EMS 16898

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Incorrect or unreliable data.

Notes:

The cruise control system is turned off and cannot be activated until the fault has been repaired.

Elimination:

Clear the DTCs and check if the DTC is generated again. If this DTC is generated again, replace the control unit.

EMS 17152

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Incorrect or unreliable data.

Notes:

The engine control unit shuts off the fuel supply to the engine using solenoid valves. As a result, it is difficult to start the engine (the engine may not start at all).

Elimination:

Erase the trouble codes from the memory, then turn off the ignition with the ignition key and turn it on again. If this DTC is generated again, replace the control unit.

EMS 17153

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit. A malfunction code can be generated by generating one of the malfunction codes 12800, 58880, 588810, or 57344-57350.

Notes:

While there is a malfunction, the engine control unit shuts off the fuel supply using solenoid valves. This often leads to short-term disruptions of the engine or, when the malfunction is present for a long period of time, to stop the engine. A fault code 17155 will also be generated.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17154

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

The control unit does not turn off despite all attempts as long as the active fault status is maintained.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17155

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit. A malfunction code can be generated by generating one of the malfunction codes 12800, 58880, 588810, or 57344-57350.

Notes:

While there is a malfunction, the engine control unit shuts off the fuel supply using solenoid valves. This often leads to short engine failure intervals. If the fault is present for a longer period of time, fault code 17153 will also be generated.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17408

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17409

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17410

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17411

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17412

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

This DTC will also generate DTCs 17413 and 17424.

Elimination:

Use SDP3 to restore the original values of the configuration parameters to the control unit. Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on again. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17413

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

This DTC will also generate DTC 17424.

Elimination:

Clear the trouble code memory. Turn on and off the onboard power supply with the ignition key. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17414

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17415

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

While there is a fault, the car cannot start moving.

Elimination:

Clear the DTC memory and perform a vehicle road test within 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17424

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed). During the entire time interval when the detected fault appears, the following functions are disabled:

Engine power takeoff

Clutch protection

Engine torque limit on some gears

Vehicle mass rating

Cruise control and cruise control will operate with a noticeable delay.

The engine fan speed control system will operate abnormally.

Elimination:

Use SDP3 to restore the original values ??of the configuration parameters to the control unit. Erase the trouble codes from the memory, then turn off the ignition with the ignition key, and then turn it on again. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 17425

Blocks:

2110163, 2110160

Title:

Control unit parameter

Fault:

In the engine control unit there is a parameter that indicates whether there is a clutch on the car.

The engine control unit also receives information about the status of the clutch from the coordinator on the CAN

bus.

This DTC is generated if the setting in the engine control unit does not fully match the information that is received via the CAN bus.

The reasons:

A car can be converted without properly adapting the engine control unit, coordinator and SOPS file. The engine control unit or coordinator could be replaced without proper programming of spare parts.

Notes:

Check whether the car has been upgraded, which affects this parameter.

Make sure the car has the correct SOPS file and program the spare parts for the engine control unit and coordinator.

EMS 20480

Blocks:

2110163, 2110160

Title:

EGR composition

Fault:

Only a very small amount of EGR gas returns even on condition that the control unit has commanded the EGR valve for full or almost complete opening.

The reasons:

Possible causes of a malfunction can be the following:

The EGR valve is in the closed or almost closed position. This may be due to the fact that the valve is stuck, there is not enough pressure in the control cylinder or there is a strong internal leakage in the control cylinder. Track valve defective.

Leakage in the exhaust gas recirculation system.

The mass flow sensor generates a too high value. This leads to the fact that the control unit concludes that the engine receives too little volume of recirculated gases.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the valve in the EGR valve, the control cylinder and the follow valve by activating the elements using the Scania Diagnos program.

Check for leaks in the EGR system.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

EMS 20481

Blocks:

2110163, 2110160

Title:

EGR composition

Fault:

A very large amount of EGR gases is returned even if the control unit has commanded the EGR valve to close or almost completely.

The reasons:

Possible causes of a malfunction can be the following:

The EGR valve does not close.

The leakage of the follower valve.

Blockage of the channel of the valve of pressure relief in the valve block.

The mass flow sensor indicates a too low value. This leads to the fact that the control unit concludes that the engine receives too much of the recirculated gases.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the EGR valve.

Check the tightness of the follower valve.

Check whether pressure can be released through the valve block.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

EMS 20485

Blocks:

2110163, 2110160

Title:

Mass Flow Calibration

Fault:

During the calibration of the mass flow sensor, the minimum acceptable value was obtained.

The reasons:

Possible causes of a malfunction can be the following:

Incorrect mass flow sensor, charge air pressure sensor, or charge air temperature sensor.

Leaks in the EGR system or the charge air system.

If the engine is not gaining momentum well, then a pressure sensor is likely to malfunction.

Notes:

The engine control unit shuts down the EGR system.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

Check for leaks in the EGR system or in the charge-air system.

After the repair work with SDP3, it is necessary to restore the original parameters of the EGR system in the memory of the control unit.

EMS 20486

Blocks:

2110163, 2110160

Title:

Mass Flow Calibration

Fault:

During the calibration of the mass flow sensor, the maximum allowable value was obtained.

The reasons:

Possible causes of a malfunction can be the following:

Incorrect mass flow sensor, charge air pressure sensor, or charge air temperature sensor.

Leaks in the EGR system or the charge air system.

If the engine is not gaining momentum well, then a pressure sensor is likely to malfunction.

Notes:

The engine control unit shuts down the EGR system.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

Check for leaks in the EGR system or in the charge-air system.

After the repair work with SDP3, it is necessary to restore the original parameters of the EGR system in the memory of the control unit.

EMS 20487

Blocks:

2110163, 2110160

Title:

EGR composition

Fault:

Exhaust gas (exhaust gas) quantity too high; It is not possible to reduce the amount of recycled exhaust gas to a fixed level.

The reasons:

Possible causes of a malfunction can be the following:

The EGR valve does not close.

The leakage of the follower valve.

Blockage of the channel of the valve of pressure relief in the valve block.

The mass flow sensor indicates a too low value. This leads to the fact that the control unit concludes that the engine receives too much of the recirculated gases.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the EGR valve.

Check the tightness of the follower valve.

Check whether pressure can be released through the valve block.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

EMS 20488

Blocks:

2110163, 2110160

Title:

EGR composition

Fault:

Exhaust gas (exhaust gas) quantity too low; It is not possible to increase the amount of recycled exhaust gas to a fixed level.

The reasons:

Possible causes of a malfunction can be the following:

The EGR valve does not open. This may be due to the fact that the valve is stuck, there is not enough pressure in the control cylinder or there is an internal leakage in the control cylinder.

Track valve defective.

Wedge-shaped element of the diffuser stuck in the open position.

Leakage in the exhaust gas recirculation system.

The mass flow sensor generates a too high value. This leads to the fact that the control unit concludes that the engine receives too little volume of recirculated gases.

Malfunction of the electrical circuit of the fuel temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the valve in the EGR valve, the control cylinder and the follow valve by activating the elements using the Scania Diagnos program.

Check wedge diffuser.

Check for leaks in the EGR system.

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

EMS 20489

Blocks:

2110163, 2110160

Title:

Mass Flow Calibration

Fault:

Mass flow meter calibration disabled.

The reasons:

This DTC was recorded due to a fault in the EGR system during the current operating cycle (that is, since the on-board voltage was turned on). In this case, the sensor calibration is disabled.

Notes:

Mass flow meter calibration disabled. The malfunction code is automatically cleared when the ignition key supplies voltage.

Elimination:

Check other EGR codes (active and inactive). Turn on and off the onboard power supply with the ignition key.

EMS 20490

Blocks:

2110163, 2110160, 9000000, 2089202, 2089201, 2089200

Title:

EGR

Fault:

The engine control unit has turned off the exhaust gas recirculation system.

The reasons:

The EGR system is disabled due to a system malfunction during the current cycle of operation (that is, since the on-board voltage is turned on).

Notes:

The engine control unit switches off the exhaust gas recirculation system. The malfunction code is automatically cleared when the ignition key supplies voltage.

Elimination:

Check other EGR codes (active and inactive). Turn on and off the onboard power supply with the ignition key.

EMS 20491

Blocks:

2110163, 2110160

Title:

Diffuser

Fault:

Diffuser can not be properly controlled.

The reasons:

Jamming in the diffuser due to mechanical failure or due to insufficient pressure in the cavity of the executive cylinder. This can also be due to a blockage in the pressure relief valve channel in the valve block.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

If the diffuser remains in the closed position, then at high loads and high frequencies of rotation the resistance of the diffuser increases significantly. As a result, the boost pressure and engine power will decrease, and black smoke may appear in the exhaust gases.

Elimination:

Check diffuser and actuator cylinder.

Check the tightness of the on-off valve.

Check for pressure relief through the valve block.

EMS 20736

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Engine brakes

Fault:

The latitude-modulated signal to the modulator of the motor retarder deviates from the expected value.

The reasons:

This malfunction may occur due to wear of the locking element of the engine retarder solenoid valve. There are also possible leakage of compressed air from the air tubes or from the actuating cylinder.

Notes:

The effectiveness of the motor brakes is lower than expected.

Elimination:

Ensure that there are no air leaks. Check the solenoid valve.

EMS 24576

Blocks:

2110163, 2110160

Title:

Diffuser On / Off Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short to +24 V in the on / off valve circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 24577

Blocks:

2110163, 2110160

Title:

Diffuser On / Off Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the on / off valve circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 24832

Blocks:

2110163, 2110160

Title:

Power Supply Voltage

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open circuit or short circuit on the + 24 V electrical circuit in the electrical circuit of the mass flow sensor.

Notes:

Malfunction of the mass flow sensor for recirculated exhaust gases. The engine will work with exhaust gas recirculation, but without feedback on the signal from the mass flow sensor of the recycled exhaust gas. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve.

Mass flow meter calibration disabled.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 24833

Blocks:

2110163, 2110160

Title:

Power Supply Voltage

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground in the mass flow indicator circuit.

Notes:

Malfunction of the mass flow sensor for recirculated exhaust gases. The engine will work with exhaust gas recirculation, but without feedback on the signal from the mass flow sensor of the recycled exhaust gas. Therefore, the control unit will only control the composition of EGR gases roughly, “roughly”, using predefined values ??to set the position of the EGR valve.

Mass flow meter calibration disabled.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25088

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Fan control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short circuit in the electric circuit of the solenoid valve of the fan.

Notes:

The fan of the cooling system is not controlled. In this case, the motor fan may spontaneously turn on. May affect engine temperature.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25089

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Fan control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the fan solenoid valve circuit.

Notes:

The fan of the cooling system is not controlled. May affect engine temperature.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25344

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Air Conditioning Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short to +24 V in the solenoid circuit.

Notes:

The air conditioning compressor is not controlled. In this case, it is possible spontaneous activation of the air conditioning compressor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25345

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Air Conditioning Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the air conditioning solenoid valve circuit.

Notes:

The air conditioning compressor is not controlled.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25600

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Turbine Bypass Valve Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or short in the solenoid circuit for the control valve for bypassing the turbine.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 25601

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Turbine Bypass Valve Control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the solenoid valve for the turbine bypass valve.

Notes:

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 26112

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Starter control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Open or short circuit on the “+” battery circuit of the auxiliary starter relay.

Notes:

A short circuit of +24 V can cause the starter to inadvertently turn on.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 26113

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Starter control

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A short to ground in the pre-relay starter circuit.

Notes:

Starter cannot be turned on.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 26117

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Starter.

Fault:

The engine control unit does not read the crankshaft speed sensor signal.

The reasons:

This malfunction may occur if the starter drive gear cannot engage with the flywheel ring gear while the engine is starting.

This DTC also appears if the engine control unit does not receive an engine speed signal (a speed sensor or electrical wiring is faulty).

Notes:

If within a few seconds after turning on the starter, the engine control unit does not receive a signal from the speed sensor, the starter will automatically shut down.

Elimination:

Clear the DTC and restart the engine.

It may be necessary to rotate the crankshaft at an angle.

In order to accurately determine the cause of the malfunction, check that there are no malfunction codes related to the speed sensors in the memory.

Check the speed sensors and their wiring.

EMS 26118

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Starter.

Fault:

The car moved too long with a starter.

The reasons:

The starter has been turned on longer than allowed by the control unit.

Notes:

This feature is designed to protect the starter from overheating.

Starter start is ignored.

Elimination:

After the starter has stopped, it can be connected directly.

EMS 26370

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Generator 1

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Short circuit or open circuit in the generator power supply.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 26371

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Generator 1

Fault:

The current is fed into the excitation winding of the generator when the engine is stopped.

The reasons:

Short to +24 V in the generator circuit.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 26626

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Generator 2

Fault:

When the engine is running, no current is supplied to the excitation winding of the generator.

The reasons:

Short circuit or open circuit in the generator power supply.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 26627

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Generator 2

Fault:

The current is fed into the excitation winding of the generator when the engine is stopped.

The reasons:

Short to +24 V in the generator circuit.

Notes:

The poor state of the power supply system. The battery discharge indicator located on the instrument panel lights up. Equipment that consumes significant current is turned off. Examples of disconnecting equipment: seat heating and heated exterior mirrors.

Elimination:

Check the settings for the Number of Generators parameter.

Make sure that the charging performed by the generator is directly controlled by the engine control unit.

Check wiring and generator.

EMS 26880

Blocks:

2110163, 2110160

Title:

EGR valve tracking

Fault:

The control unit has detected that the current in the circuit is less than the set value.

The reasons:

Short in the follower circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 26881

Blocks:

2110163, 2110160

Title:

EGR valve tracking

Fault:

The control unit registers the current in the circuit, although the control unit does not supply power to the circuit.

The reasons:

Short to +24 V in the follower circuit.

Notes:

The engine control unit shuts down the EGR system and calibrates the mass flow sensor.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 27136

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Solenoid valve of the motor retarder.

Fault:

The voltage on the motor solenoid valve of the retarder is significantly lower than the required level.

The reasons:

Short circuit in the solenoid valve circuit.

Notes:

The engine retarder is off while the DTC is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 27137

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Solenoid valve of the motor retarder.

Fault:

Voltage continues to flow to the solenoid valve of the motor brakes after it is turned off.

The reasons:

Short to +24 V in the solenoid circuit.

Notes:

The engine retarder is off while the DTC is present.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 39321

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Internal software error.

Fault:

In the control unit registered internal activity.

The reasons:

A fault code can be generated during the development and testing of the control unit software.

Notes:

A fault code can be generated during the development and testing of the control unit software.

The system is working normally despite the fault code.

Elimination:

For more information on the cause of the fault code, refer to the KWP2000.

EMS 40961

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC is generated again, replace the SCR control unit; This means that the main unit should be replaced.

EMS 40964

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC is generated again, replace the SCR control unit; This means that the main unit should be replaced.

EMS 40965

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC is generated again, replace the SCR control unit; This means that the main unit should be replaced.

EMS 40976

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 40977

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 40992

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open in the temperature sensor circuit

Notes:

If the signal voltage exceeds the permissible range, the control unit uses a preprogrammed value at 20 ° C.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

To verify that the sensor is working, remove it and measure its resistance.

At a temperature of 15-25 ° C, the resistance should be in the range of 1 500-2 100 Ohm.

EMS 40993

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the tank temperature sensor electrical circuit

Notes:

If the signal voltage exceeds the permissible range, the control unit uses a preprogrammed value at 20 ° C.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

To verify that the sensor is working, remove it and measure its resistance.

At a temperature of 15-25 ° C, the resistance should be in the range of 1 500-2 100 Ohm.

EMS 40999

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank temperature

Fault:

The temperature of the reagent in the tank was above the permissible value.

The reasons:

There may be a malfunction in the temperature sensor in the tank or the water valve of the heating system stuck in the open position.

This DTC can also be generated if it is very warm outside.

Notes:

As a result of a fault, the injection of the reagent is turned off.

High temperatures may cause decomposition of the reagent.

Elimination:

Check the temperature sensor in the tank.

Check whether the water valve is open in the open position.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 41008

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41009

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41015

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Temperature

Fault:

The temperature of the reagent inside the main unit was above the permissible value.

The reasons:

The cause of the malfunction may be:

Water heating valve stuck open.

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

High temperatures in the SCR system may cause decomposition of the reagent.

Elimination:

Check whether the water valve is open in the open position.

If the fault lies in the main unit, the main unit should be replaced.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 41024

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The SCR control unit indicated that the battery voltage was above the allowable value.

It was above 64.6 V.

The reasons:

This may be caused by the work start-charger.

Notes:

High voltage levels can damage the SCR system.

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 41025

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Battery voltage

Fault:

The SCR control unit indicated that the battery voltage was below the allowable value.

It was below 8.6 V.

The reasons:

The fault may occur during a cold start, if the battery is in poor condition.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the battery and alternator.

Check the connectors and wiring.

EMS 41056

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Turn off the power with the ignition key, wait at least 90 seconds, and then turn on the ignition again with the key.

If the DTC appears again, replace the main unit.

EMS 41057

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Turn off the power with the ignition key, wait at least 90 seconds, and then turn on the ignition again with the key.

If the DTC appears again, replace the main unit.

EMS 41072

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank level sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the level sensor in the reagent tank.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses a preprogrammed value of 100% (full tank).

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92–397 ohms.

EMS 41073

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – tank level sensor

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the level sensor in the reagent tank.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses a preprogrammed value of 100% (full tank).

As a result of a fault, the injection of the reagent is turned off.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Check the electrical components, electrical connectors and wiring.

Sensor resistance should be 92–397 ohms.

EMS 41075

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Level in the reagent tank

Fault:

The amount of reagent in the tank below the permissible value.

The reasons:

Or too little reagent in the tank or a level sensor in the tank is faulty.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

For troubleshooting the SCR system, refer to the Scania Multi 03-25 “Exhaust System, SCR (Selective Catalytic Reduction)” section.

Refill reagent. If there is enough reagent in the tank, check the level sensor.

EMS 41077

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Consumption

Fault:

Reagent consumption too high. The flow rate in the tank is greater than the calculated amount of reagent that can be injected.

The reasons:

Leakage in the hoses or in the reagent tank.

The level sensor in the tank may give incorrect values.

Notes:

There is a risk that the crystallized reactant will accumulate in the exhaust pipe and later damage the catalytic converter.

Elimination:

Check for a signal from a level sensor in the tank.

Check the tank level sensor, electrical connectors and wiring.

Check the tank, hoses and connections for leaks.

Remove the end plate from the muffler, and check if reagent has accumulated.

EMS 41078

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Consumption

Fault:

Reagent consumption too low. The flow rate in the tank is lower than the injected amount of reagent.

The reasons:

System hoses may be blocked.

The level sensor in the tank may give incorrect values.

The vent valve is stuck open.

Notes:

A malfunction leads to an increase in exhaust emissions.

Elimination:

Check for a signal from a level sensor in the tank.

Make sure the hoses are not blocked.

Check the level sensor in the tank.

Check whether the vent valve is open in the open position.

EMS 41080

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent tank temperature

Fault:

The temperature in the tank is below acceptable.

The reasons:

Malfunction in the tank temperature sensor or tank heating system.

The water valve for the heating system can open in the open position.

Notes:

No description

Elimination:

Check the temperature sensor in the tank and wiring.

Check whether the water valve of the heating system is stuck in the closed position.

EMS 41081

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Temperature

Fault:

The temperature sensor in the main unit indicates that the reagent temperature is below acceptable.

The reasons:

Malfunction in tank heating.

Internal malfunction in the control unit.

Notes:

No description

Elimination:

Check the electrical wires to the temperature sensor.

Check whether the water valve of the heating system is stuck in the closed position.

If the fault lies in the main unit, replace the main unit.

EMS 41088

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor in front of the catalytic converter.

Notes:

If the signal voltage exceeds the permissible range, the control unit uses the preprogrammed value at 0 ° C.

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the sensor resistance. If the temperature is in the range 10 – 30 ° C, the resistance should be approximately 207 – 222 ohms.

EMS 41089

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Exhaust gas temperature sensor in front of the SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit in the electrical circuit of the temperature sensor in front of the catalytic converter.

Notes:

If the signal voltage exceeds the permissible range, the control unit uses the preprogrammed value at 0 ° C.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the sensor resistance. If the temperature is in the range 10 – 30 ° C, the resistance should be approximately 207 – 222 ohms.

EMS 41104

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Temperature sensor after SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor after the catalytic converter.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses a preprogrammed value of -273 ° C.

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the sensor resistance. If the temperature is in the range 10 – 30 ° C, the resistance should be approximately 207 – 222 ohms.

EMS 41105

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Temperature sensor after SCR catalytic converter

Fault:

The voltage in the circuit was outside the limits.

The reasons:

A break in the electrical circuit of the temperature sensor after the catalytic converter.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses a preprogrammed value of -273°C .

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the electrical components, electrical connectors and wiring.

Measure the sensor resistance. If the temperature is in the range $10 - 30^{\circ}\text{C}$, the resistance should be approximately $207 - 222$ ohms.

EMS 41218

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Dispenser

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit on the + 24 V electrical circuit in the reagent dispenser electrical circuit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other.

To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Check the electrical components, electrical connectors and wiring.
Resistance reagent dispenser should be 13,7-15,3 ohms at 20 ° C.

EMS 41219

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Dispenser

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or a short to ground in the electrical circuit of the reagent dispenser.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is off, may interrupt the data transmission between the SCR control unit and engine control unit. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Check the electrical components, electrical connectors and wiring.
Resistance reagent dispenser should be 13,7-15,3 ohms at 20 ° C.

EMS 41235

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

air pressure in the SCR system was out of range.

The reasons:

The malfunction may be due to too low air pressure from the vehicle to the SCR system.

This can also be due to air leakage in the SCR system: either internal leakage in the main unit or in the air ducts outside the main unit.

The fault code is also generated in the case, if the pressure is too high due to clogging in the SCR system.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check to see if it was too low air pressure in a vehicle compressed air system at the time of generation of the DTC.

If the air pressure was below 7.2 bar, there may be a fault not related to the SCR system.

Check for leaks or blockages in the air lines.

Follow the verification system as provided in SDP3 for the SCR system. Checking the system can help identify some of the above problems.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 41236

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Compressed air supply for SCR system

Fault:

The compressed air supply for the SCR system is not sufficient to run the SCR system.

The reasons:

The air pressure in the vehicle's compressed air supply system may be too low due to high air flow or leakage outside the SCR system.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check for malfunction codes in the air supply system (APS) and troubleshoot them.

If fault codes are detected in the APS that indicate low pressure in the air supply system and fault code 41235 was not generated, it is likely that the fault code is due to a temporary problem related to the air pressure on the vehicle. Clear the fault code.

EMS 41251

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure at system start was above the allowable value.

The reasons:

The return line to the tank may be plugged. There may be blockage inside or outside the main unit.

The reagent tank vent valve may be blocked.

The vent gasket has expanded due to the presence of diesel in the urea.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check that the reagent tank vent valve is not clogged. If there is an obstruction, replace the vent valve.

Check that the return hose to the tank is blocked.

Follow the verification system as provided in SDP3 for the SCR system. Checking the system can help identify some of the above problems.

If the fault lies in the main unit, it should be replaced.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 41267

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure did not increase sufficiently after starting the pump at full capacity.

The reasons:

Possible causes of a malfunction can be the following:

Reagent tank is empty.

The main unit received irreparable damage due to the penetration of diesel fuel into the reagent tank.

The reagent tank vent may be blocked.

Tank pre-filter or main filter blocked.

Reagent hoses are leaking or plugged.

The cooling system in the tank does not work in cold weather.

Reagent dispenser is closed completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check if there is already some reagent in the tank and make sure that it is not frozen.

Check for diesel in the tank. If the tank has diesel fuel, it is necessary to clean the tank and replace the main unit.

Check for diesel in diaphragm pump. If diesel fuel is present in the diaphragm pump, it is necessary to replace the pump, gaskets, filter and vent valve.

Check to see if the vent is clogged tank reagent channel.

Check if the prefilter or main filter is clogged.

Check lines and connections for leaks and blockages.

Check if the reagent tank is working.

Ensure the reagent dispenser closes completely.

For one minute, bring the pressure in the tank to 0.5 bar. Use hose kit 99628.

Check for double urea leaks in the reagent intake unit hose.

Check that the hose clamp is installed correctly. Tighten the clamp or install a new hose clamp.

The fault code EMS 4143 may also be due to the fact that due to the presence of diesel fuel, the valve plate expands in the pump. Due to the deformation of the valve plate, pressure build-up in the pump is not possible.

Check for diesel in the filter.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 41283

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

The pressure in the system during normal operation was above the allowable value.

The reasons:

The cause of the malfunction may be:

Malfunction in diaphragm pump.

Malfunction of the main unit

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Replace diaphragm pump.

Check if diesel fuel has entered the main unit. If diesel fuel is present in the filter, thoroughly flush the main unit and replace the diaphragm pump, gaskets, and vent valve.

Replace the main unit.

EMS 41362

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41363

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated . Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41474

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Water Reagent Heating Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

Short circuit on the electric circuit + 24 V in the electric circuit of the water heating valve.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Check the electrical components, electrical connectors and wiring.

The normal resistance of a water valve at room temperature should be approximately 140 ohms.

EMS 41475

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Water Reagent Heating Valve

Fault:

The voltage in the circuit was outside the limits.

The reasons:

An open or short to ground in the water valve electrical circuit to heat the reagent.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Check the electrical components, electrical connectors and wiring.

The normal resistance of a water valve at room temperature should be approximately 140 ohms.

EMS 41490

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is off, may interrupt the data transmission between the SCR control unit and engine control unit. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41491

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be

interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 41776

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply for SCR control unit

Fault:

The SCR control unit turns off too soon. The power to the SCR system was turned off before the system was turned off.

The reasons:

If the car has a mass switch (used in buses and ADR cars), a fault code can be generated if the battery mass switch is used within 90 seconds after the ignition is turned off.

There may be a fault in the supply voltage to the SCR system.

In addition, the malfunction may be due to an internal malfunction in the control unit.

If at the same time a fault code 5657 is generated, the fault is probably not in the SCR system.

Notes:

Full system shutdown will not be performed. It takes approximately 90 seconds to turn off the SCR system after the ignition key is turned off.

This means that a reagent will remain in the hoses and in the nozzle dispenser.

This can cause the system to freeze in cold weather, which is likely to cause damage to the SCR system.

Elimination:

Switch off the ignition with the key, wait 90 seconds and then turn it on again. If the DTC remains inactive, delete the DTC.

If the fault code persists and at the same time no fault code 5657 has been generated, check the power supply to the main unit.

If the fault lies in the main unit, it should be replaced.

EMS 41777

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply for SCR control unit

Fault:

The SCR control unit shuts down too late.

The reasons:

Internal fault in the main unit or faulty wiring of the SCR control unit.

Notes:

SCR system does not turn off.

The current is still consumed, which can lead to a low battery.

Elimination:

Check electrical wiring.

If the fault lies in the main unit, it should be replaced.

EMS 41808

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

The frequency of the diaphragm pump in the main unit was above the allowable value.

The reasons:

The cause of the malfunction may be:

Air in the reagent suction piping.

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Replace diaphragm pump.

Erase the DTC and turn off the power to the vehicle electrical system with the ignition key.

Wait at least 90 seconds and then turn on the power again. If the DTC appears again, check for reagent leaks between the reagent tank and the main unit.

If the fault lies in the main unit, it should be replaced.

EMS 41809

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit or malfunction in the diaphragm pump.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Replace diaphragm pump.

Clear the DTC and turn off the power with the ignition key. Wait at least 90 seconds and turn on the power again.

If the DTC appears again, replace the main unit.

EMS 42048

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pump does not raise the pressure in the SCR system for a given time.

The reasons:

A malfunction may be due to one of the following reasons:

Reagent tank is empty.

The reagent tank vent is blocked.

Tank pre-filter or main filter blocked.

Reagent lines are leaking or clogged.

The heating system in the tank is not able to defrost the reagent during cold weather.

Reagent dispenser does not close completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check if the reagent tank is not blocked.

To check if the suction pipe is heating up. Start the engine and make sure the suction line gets warm. If not, make sure the engine coolant reaches it as it should be.

Also ensure that the water valve opens fully.

If heating occurs, check if the reagent is flowing into the suction pipe or into its connections.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42049

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pressure in the SCR system does not fall as expected when the injection valve is open.

The reasons:

The cause of the malfunction may be:

Reagent freezing in the injection pipe.

Freezing or crystallization of the reagent in the dispenser, piping or spray nozzle of the reagent.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Make sure that the engine coolant level is not too low.

To verify that the heating line between the main unit and the reagent dispenser is working. Start the engine and make sure the suction line gets warm. Otherwise, make sure that the coolant from the engine reaches the line as it should be. Also ensure that the water valve opens fully.

If heat is present, remove and clean the injection device, reagent dispenser and piping.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of

the faults listed above.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42050

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pump does not raise the pressure in the SCR system for a given time.

The reasons:

A malfunction may be due to one of the following reasons:

Reagent tank is empty.

The reagent tank vent is blocked.

Tank pre-filter or main filter blocked.

Reagent lines are leaking or clogged.

The heating system in the tank is not able to defrost the reagent during cold weather.

Reagent dispenser does not close completely.

Internal malfunction in the main unit.

Pressure sensor malfunction.

The vent valve is stuck open.

The pre-filter on the main unit is blocked.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Make sure that the engine coolant level is not too low.

Check if the reagent tank is not blocked.

To check if the suction pipe is heating up. Start the engine and make sure the suction line gets warm. If not, make sure the engine coolant reaches it as it should be.

Also ensure that the water valve opens fully.

If heating occurs, check if the reagent is flowing into the suction pipe or into its connections.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the

DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42051

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Defrosting the reagent in the SCR system

Fault:

The pressure in the SCR system does not fall as expected when opening the solenoid valve in the return line.

The reasons:

A fault code can be generated if the reagent tank vent is plugged.

The cause of the fault can also be:

The reagent return line is blocked, or the solenoid valve does not open as it should.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Make sure that the engine coolant level is not too low.

Check if the reagent tank is not blocked.

To check if return line heating is working. Start the engine and make sure the main line gets warm. If not, make sure the engine coolant reaches it as it should be.

Also ensure that the solenoid valve opens fully. If the heat is normal, check that the return line is not blocked.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42240

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Voltage supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

The fuel level sensor, which is currently the only sensor in this sensor group, has a short to battery.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the electrical components, electrical connectors and wiring.
Sensor resistance should be in the range between 397 ohms and 92 ohms.

EMS 42241

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Voltage supply

Fault:

The voltage of one of the sensors having a common power is higher than the set value.

The reasons:

The level sensor in the tank, which is currently the only sensor in this group, has a short to ground.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the electrical components, electrical connectors and wiring.
Sensor resistance should be in the range between 397 ohms and 92 ohms.

EMS 42242

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42243

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42244

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Data exchange between the NOx sensor after the catalytic converter and the SCR control unit.

Fault:

The SCR control unit does not receive the CAN message from the NOx sensor.

The reasons:

Data transfer between the NOx sensor and the SCR control unit is not working.

If the DTC appears once, it may be due to the replacement of the NOx sensor.

If the fault code repeats, there is probably a fault in the electrical supply voltage circuit to the NOx sensor, NOx sensor, electrical connectors or wiring.

Notes:

No description

Elimination:

Erase the DTC and turn off the power to the vehicle electrical system with the ignition key. Wait at least 90 seconds and then turn on the power again.

If the DTC is generated again, check the electrical wiring and clean the electrical connectors.

If this does not help, make sure that the SCR control unit receives the ignition voltage (U15) and there is a voltage supply to the NOx sensor control unit.

If this does not help, replace the NOx sensor.

EMS 42245

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Data exchange between the NOx sensor after the catalytic converter and the SCR control unit.

Fault:

The SCR control unit receives several CAN messages from the NOx sensor in too fast a sequence.

The reasons:

Failure to communicate between the NOx sensor and the SCR control unit.

Notes:

No description

Elimination:

Check the electrical wiring and clean the connectors.

If this does not help, replace the NOx sensor.

EMS 42248

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Injection Valve

Fault:

With injection, the pressure in the SCR system does not decrease as expected.

The reasons:

This may be due to a blockage in the injection valve, on the release of the main unit, or in the hose between the main unit and the injection valve.

Notes:

As a result of this fault, the SCR system shuts down.

When the ambient temperature is below -10°C , a malfunction may result in damage to the injection valve in the reagent dispenser.

Elimination:

Make sure the hoses are not twisted.

Check whether reagent crystals are present in the reagent dispenser or main unit. Wash off the crystals with water.

If the temperature was below -10°C , check to see if the injection valve in the reagent dispenser is leaking. Follow the verification system as provided in SDP3 for the SCR system. Checking the system can help identify some of the above problems.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42249

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Reagent Pressure

Fault:

During periods when the reagent is not injected, the pressure in the SCR system decreases more than it should be.

The reasons:

Leaks in reagent supply lines, reagent dispenser or internal leaks in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Check for leaks in the SCR system.

If the vent valve is stuck open, replace the vent valve.

If the fault lies in the main unit, it should be replaced.

Follow the verification system as provided in SDP3 for the SCR system. Checking the system can help identify some of the above problems.

EMS 42251

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42252

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42255

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR pressure

Fault:

The pressure in the SCR system is implausible compared to atmospheric pressure.

The reasons:

The fault may be due to different reasons:

Atmospheric pressure sensor defective.

A blockage in the return hose between the main unit and the reagent tank or in the reagent tank drain hose.

Malfunction of the main unit.

Malfunction of the pressure sensor in the main unit.

Faulty ventilation valve.

Diaphragm pump damaged by diesel fuel.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check for fault codes in the coordinator that indicate faults in the atmospheric pressure sensor.

Check for obstructions in the return pipe between the main unit and the reagent tank.

Check whether there is a blockage in the rejectant air outlet pipe.

Check the wiring.

If everything else is in order, as a last resort, replace the main unit.

In order for the control unit to verify a fault, it must perform a sequence of checks. When the control unit performs a complete sequence of checks without detecting a fault, the fault becomes inactive.

The conditions under which the control unit checks:

There should be no other DTCs related to faults in the main unit.

The SCR system should have completely shut down the system. It takes approximately 90 seconds to turn off the SCR system after the ignition key is turned off.

The control unit must perform the test in four consecutive cycles. Start the engine and let it run at idle for at least 3 minutes. Then turn off and turn on the power four times, at intervals of at least 90 seconds.

You can go to the fault code monitoring function and view the fault code. There you can see if the conditions under which the control unit confirms that the fault has been eliminated have been satisfied. When conditions are satisfied and a check is performed, the status of the DTC is displayed during the check process. If the DTC is under review, the control unit has detected a fault. If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 42256

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR system emergency stop

Fault:

The SCR system was turned off.

The reasons:

The SCR system was turned off due to too high temperature in the main unit.

Notes:

If the temperature drops to an acceptable level, the SCR system starts up again.

Elimination:

Check for any other DTCs that have been generated and may have caused this DTC, and use them to troubleshoot.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 42258

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42261

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42262

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42264

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

Air pressure at current operating conditions is lower than expected.

The reasons:

Leaks in the compressed air line between the main unit and the reagent dispenser.
This fault may be due to a blockage of the air circuit in the main unit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check for leaks between the main unit and the reagent dosing unit.
If no leakage is found, replace the main unit.

EMS 42265

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 42266

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Main Unit

Fault:

No description

The reasons:

Internal malfunction in the main unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Disconnect the heating element connector to the diaphragm pump. If the fault code becomes inactive, this indicates a malfunction of the heating element. In this case, replace the diaphragm pump.

Try to remove the fault code, and then turn off and turn on the ignition. If the DTC appears again, replace the main unit.

EMS 43329

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Incorrect CAN version

Fault:

The engine control unit and the SCR control unit do not agree on which CAN version is used.

The reasons:

A fault occurs if one of the control units has been replaced and they are not compatible with each other.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the spare part number of the control unit and replace the control unit that has the wrong spare part number.

EMS 43345

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Communication with the SCR control unit

Fault:

The engine control unit does not receive a CAN message from the NOx sensor. If the vehicle is equipped with an SCR system, the CAN message is transmitted via the SCR control unit.

The reasons:

Communication between the engine control unit and the SCR control unit or between the SCR control unit and the NOx sensor is interrupted.

If fault code 5688 was simultaneously generated, there may be a problem in the communication between the engine control unit and the SCR control unit.

If fault code 5688 was simultaneously generated, there may be a communication failure between the SCR control unit and the NOx sensor.

If the DTC was generated only once, it may be due to the interruption of the voltage supply to the NOx sensor while maintaining the voltage supply to the SCR control unit.

The SCR control unit in the main unit may be faulty.

If a fault code is generated frequently, it may be due to a problem in the wiring harness or connectors.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Fault codes are generated based on information from the SCR control unit. If there is no communication between the SCR control unit and the engine control unit, no SCR related fault codes are generated in the engine control unit.

If this DTC is generated, there is no communication between the engine control unit and the SCR control unit. This may imply that there are no SCRs related to the SCR in the engine control unit, and those that have been erased will not be generated again, even if there is still a fault.

Elimination:

Also check for DTCs related to CAN communication in other control units. Troubleshoot these problems first. Switch off the ignition and wait for 90 seconds before turning it on again.

If there are fault codes for the SCR system, first diagnose them.

Switch the ignition on and off several times. Fault codes that were not generated in the engine control unit could be present in the SCR control unit, because this fault code is active.

If the DTC recurs and the DTC does not indicate that the SCR system is off, check the wiring and fuses for the SCR system and clean the electrical connectors.

Also make sure that both control units simultaneously receive voltage (U15).

If the steps above do not help, replace the SCR control unit. If this does not help, replace the engine control unit.

EMS 43361

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx sensor connection

Fault:

The engine control unit has no CAN message from the NOx sensor. If the vehicle is equipped with an SCR system, the CAN message is transmitted via the SCR control unit.

The reasons:

Communication between the engine control unit and the NOx sensor or between the SCR control unit and the NOx sensor is interrupted.

If a DTC 43345 was generated at the same time, there may be a problem in the communication between the engine control unit and the SCR control unit.

Troubleshoot using fault code 43345. If fault code 43345 was not generated at the same time, there may be a fault in the communication between the SCR control unit and the NOx sensor.

If the DTC was generated only once, it may be due to the interruption of the voltage supply to the NOx sensor while maintaining the voltage supply to the SCR control unit.

The SCR control unit in the pump may be faulty.

If a fault code is generated frequently, it may be due to a problem in the wiring harness or connectors.

Notes:

Functions in the SCR system are not affected.

Elimination:

Clear the DTC memory and check the engine start.

Turn off and turn on the onboard power supply with the ignition key. If the DTC reappears, check the wiring and clean the electrical connectors.

If this does not help, check whether the SCR control unit and the NOx sensor are receiving an ignition voltage on / off signal (U15) at the same time. If the above action does not help, replace the NOx sensor first, and if that does not work, replace the SCR control unit. However, it is not typical for the fault to be covered in the SCR control unit. Before replacing the SCR control unit, make sure that the fault is not caused by something else.

EMS 43362

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx sensor connection in front of the catalytic converter

Fault:

The engine control unit has no CAN MSG8 message “NOx sensor data before catalytic converter” (NOx sensor data in front of the catalytic converter) from the NOx sensor in front of the catalytic converter. If the vehicle is equipped with an SCR system, the CAN message is transmitted via the SCR control unit.

The reasons:

Communication between engine control unit and NOx sensor interrupted.

If a malfunction code A951 was generated at the same time, there may be a problem in the communication between the engine control unit and the SCR control unit. Troubleshoot by fault code A951.

If the DTC A951 was not generated at the same time, there may be a fault in the communication between the SCR control unit and the NOx sensor.

If the DTC was generated only once, it may be due to the interruption of the voltage supply to the NOx sensor while maintaining the voltage supply to the SCR control unit.

If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

Notes:

No description

Elimination:

Clear the DTC memory and check the engine start. Turn off and turn on the ignition with the ignition key several times.

If the DTC reappears, check the wiring and clean the electrical connectors.

If this does not help, check whether the SCR control unit and the NOx sensor are receiving an ignition voltage on / off signal (U15) at the same time.

If the above action does not help, replace the NOx sensor first, and if that does not work, replace the SCR control unit.

EMS 43376

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor after catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor indicating that there is a break in the electrical circuit.

The reasons:

An open circuit in the NOx sensor circuit

Notes:

Functions in the SCR system are not affected.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 43377

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor after catalytic converter

Fault:

The SCR control unit received a message from the NOx sensor stating that there is a short in the circuit.

The reasons:

Short circuit in the NOx sensor electrical circuit.

Notes:

Functions in the SCR system are not affected.

Elimination:

Check the electrical components, electrical connectors and wiring.

EMS 43378

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor in front of the catalytic converter

Fault:

The NOx sensor has detected a break in the electrical circuit and sends a message to the SCR control unit.

The reasons:

An open circuit in the NOx sensor electrical circuit in front of the catalytic converter.

Notes:

This test is performed by the NOx sensor in front of the catalytic converter. The result is sent to the engine control unit via CAN. The SCR system works even when this DTC is active.

Elimination:

Check for signal from the NOx sensor.

Check the NOx sensor, connectors and wiring.

EMS 43379

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – NOx sensor in front of the catalytic converter

Fault:

The NOx sensor has detected a short circuit in the electrical circuit and sends a message to the SCR control unit.

The reasons:

Short circuit in the electrical circuit of the NOx sensor in front of the catalytic converter or too low voltage / current in this electrical circuit

Notes:

This test is performed by the NOx sensor in front of the catalytic converter. The result is sent to the engine control unit via CAN. The SCR system works even when this DTC is active.

Elimination:

Check for signal from the NOx sensor.

Check the NOx sensor, connectors and wiring.

EMS 43520

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Nitrogen oxides (NOx) after catalytic converter

Fault:

The measured amount of nitrogen oxides is different from what should be.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be due to a malfunctioning catalytic converter, a malfunctioning NOx sensor, or a malfunctioning reagent dosing system.

The calculated NOx is different from the measured NOx. The reason for this may be an excessively high or variable amount of NOx from the engine or an incorrect value from the NOx sensor.

Notes:

No description

Elimination:

Ensure that the dosing function of the reagent is working correctly. To do this, use SDP3 to perform a system check and a dosage check.

Check the NOx sensor.

Check that the catalytic converter is intact.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on

the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 43521

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR – Nitrogen oxides (NOx) after catalytic converter

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

The reasons:

The SCR system does not reduce NOx properly.

Notes:

No description

Elimination:

Check the SCR system in the following sequence:

Check for any other active DTCs related to exhaust emissions.

Make sure that the quality of the reagent in the appropriate tank meets the applicable standards.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check that the catalytic converter is intact.

Ensure that the base material of the catalytic converter is not damaged.

You can use the following options to make sure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. The test takes approximately 30 minutes and should be performed outdoors.

Otherwise, you can take the following steps so that the control unit recognizes the fault as invalid. Perform a road test with a heavy load – four times in succession with an intermediate engine shutdown.

EMS 43525

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Malfunction in the SCR catalytic converter

Fault:

The temperature after the SCR catalytic converter is different from what it should be.

The reasons:

Malfunction in the SCR catalytic converter or exhaust gas temperature sensors before and after the SCR catalytic converter.

Notes:

A malfunction leads to an increase in exhaust emissions.

Elimination:

Check the exhaust gas temperature sensors before and after the SCR catalytic converter.
Verify that the SCR catalytic converter and nozzle spray are installed correctly.

EMS 43526

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx level

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

High level of exhaust toxicity. There is a risk of exceeding the prescribed limit of NOx emissions. Torque reduction is not activated.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be caused by the following:

NOx emission level too high.

Low quality reagent.

Reagent injection nozzle malfunction.

Catalytic Closure.

NOx sensor transmits incorrect value.

Malfunction in dosing module.

Malfunction in the main unit.

Notes:

Maximum engine torque is limited.

Elimination:

Check for any other trouble codes related to exhaust emissions.

Ensure that the quality of the reagent in the tank conforms to current standards.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water. Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

You can use the following options to make sure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. It takes about 5-30 minutes to complete the test.

Otherwise, you can perform the following actions so that the control unit recognizes the failure as invalid:

Perform a road test with a heavy load on it.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 43527

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx level

Fault:

The measured level of nitrogen oxides (NOx) is above acceptable.

Excessively high exhaust emissions. In the car, the prescribed limit of NOx emissions is exceeded. Torque reduction activated.

The reasons:

The control unit detects that the SCR system incorrectly reduces the amount of nitrogen oxides.

This may be caused by the following:

NOx emission level too high.

Low quality reagent.

Reagent injection nozzle malfunction.

Catalytic Closure.

The catalytic converter may be damaged by oil transferred from the turbocharger.

NOx sensor transmits incorrect value.

Malfunction in dosing module.

Malfunction in the main unit.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40%.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Check the SCR system in the following sequence:

Check for any other active DTCs related to exhaust emissions.

Make sure that the quality of the reagent in the appropriate tank meets the applicable standards.

Ensure that the reagent lines and injection device are not plugged. The crystals can be washed off with water.

Make sure the reagent dispenser is not blocked. The crystals can be washed off with water.

Check the NOx sensor.

Check that the catalytic converter is intact.

Ensure that the catalytic converter substrate is intact.

Check for faults in the turbocharger. Contact with oil can lead to irreparable damage to the catalytic converter.

Continue as follows to ensure that the problem is resolved:

To ensure that the problem has been rectified, you can check the “Recognizing DTCs for NOx Control Invalid”, which is on the “Checks” tab in SDP3. This test should be performed outdoors, because the exhaust gas temperature becomes very high and there is a risk that the exhaust hose will melt. It takes about 5-30 minutes to complete the test.

Alternatively, you can perform the following actions so that the control unit recognizes the failure to be invalid:

Perform a road test with a heavy load.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

Using the ignition key, turn off and turn on the power three times in a row at intervals of 10 seconds to deactivate the test lamp.

EMS 43552

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

NOx sensor after catalytic converter

Fault:

The measured amount of nitrogen oxides is different from what should be.

The reasons:

There is a malfunction in the NOx sensor after the catalytic converter.

Notes:

No description

Elimination:

Replace the NOx sensor.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC does not become active immediately. In order for the control unit to generate an active fault code, the fault causing the code generation

must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is generated, you can use the DTC Monitoring feature.

EMS 43584

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

No description

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

EMS 43585

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be

interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

EMS 43586

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is disabled, data transfer between the SCR control unit and the engine control unit may be interrupted. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

EMS 43587

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR control unit

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result of a fault, the SCR system shuts down and the reagent injection shuts down.

When the SCR system is turned off, DTCs 42256, 43345, and 43361 related to data transmission for the SCR system can be generated. Perform a primary troubleshooting using this fault code.

When the SCR system is off, may interrupt the data transmission between the SCR control unit and engine control unit. To ensure correct handling of the DTC, control units must be able to communicate with each other. To restore communication, turn off the ignition and wait 90 seconds before turning it on again.

Elimination:

Replace the SCR control unit. This means that the main unit must be replaced.

EMS 43590

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply to elements in the SCR system

Fault:

The voltage in the electrical supply circuit of the reagent dispenser was out of range.

The reasons:

Short to battery + in the reagent dispenser electrical circuit.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the reagent dispenser, its connectors and wiring.

Check the battery voltage.

EMS 43591

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Voltage supply to elements in the SCR system

Fault:

Interruption in the electric supply circuit of the reagent dispenser.

The reasons:

Interruption in the electric supply circuit of the reagent dispenser.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check the reagent dispenser, its connectors and wiring.

Check the battery voltage.

EMS 43592

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

The difference in air pressure before and after the constriction is too small.

The reasons:

The injection device or hose between the reagent dispenser and the injection device is plugged.

Notes:

Due to a malfunction, the injection of the reagent does not work, which causes an increase in vehicle emission of nitrogen oxides.

Elimination:

Check whether the injection device or the pipeline is not blocked between the reagent dispenser and the injection device.

EMS 43593

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR air pressure

Fault:

Air pressure in SCR system too high.

The reasons:

A malfunction may be due to one of the following reasons:

The formation of crystals in the nozzle sprayer or the pipe between the reagent dispenser and the nozzle sprayer.

The air line between the main unit and the reagent dispenser is plugged or twisted.

Malfunction in additive dispenser.

Notes:

As a result of a fault, the injection of the reagent is turned off.

Elimination:

Check whether the injection device or the pipeline is not blocked between the reagent dispenser and the injection device.

Check the air line between the main unit and the reagent dispenser for any blockage or twist.

Replace additive dispenser.

If the problem persists, replace the main unit.

Follow the verification system as provided in SDP3 for the SCR system. System checks can help detect some of the faults listed above.

If the DTC is invalid, the SCR system is OK. Clear the DTC without taking any action.

To check if the malfunction has been fixed and if the malfunction code does not occur again, you can click on the malfunction code monitoring function and view the malfunction code. This DTC is not generated immediately. In order for the control unit to generate an active fault code, the fault causing the code generation must occur in four consecutive cycles, that is, the ignition must be turned off and on four times. To see if the DTC is in the process of being considered, that is, whether a DTC is being generated, you can use the DTC Monitoring feature.

EMS 43673

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

SCR Voltage

Fault:

The SCR control unit detects that the battery voltage is lower than the value measured by the engine control unit.

The reasons:

Electrical wiring or control box connectors are damaged.

Notes:

No description

Elimination:

Check the electrical connectors and wiring between the engine control unit and the SCR system.

EMS 45056

Blocks:

2098557, 2098556

Title:

Hydraulic pressure

Fault:

Oil pressure is below the limit value of the range of allowable values ??of oil pressure.

The reasons:

The malfunction may be due to low oil level or oil leakage.

Notes:

In the event of this fault, the control unit may reduce the maximum torque. If this breakage occurs, the maximum torque is reduced by 30%.

Elimination:

Check the oil level.

Check the system for oil leakage.

EMS 45057

Blocks:

2098557, 2098556

Title:

Hydraulic pressure

Fault:

Oil pressure is below the limit value of the range of allowable values ??of oil pressure.

The reasons:

The malfunction may be due to low oil level or oil leakage.

Notes:

Turn off the engine to protect it from damage.

Elimination:

Check the oil level.

Check the system for oil leakage.

EMS 45312

Blocks:

2098557, 2098556

Title:

Coolant level

Fault:

The coolant level is below the limit value of the range of acceptable values ??for the coolant level.

The reasons:

A malfunction may be due to a low coolant level or leakage.

Notes:

In the event of this fault, the control unit may reduce the maximum torque. If this breakage occurs, the maximum torque is reduced by 30%.

Elimination:

Check the coolant level.

Check system for coolant leakage.

EMS 45313

Blocks:

2098557, 2098556

Title:

Coolant level

Fault:

The coolant level is below the limit value of the range of acceptable values ??for the coolant level.

The reasons:

A malfunction may be due to a low coolant level or leakage.

Notes:

Turn off the engine to protect it from damage.

Elimination:

Check the coolant level.

Check system for coolant leakage.

EMS 45568

Blocks:

2098557, 2098556

Title:

Coolant temperature

Fault:

The temperature of the coolant exceeded the permissible value set in the control unit.

The reasons:

Engine cooling system is not working properly.

Notes:

To avoid overheating and possible damage, the engine is muffled.

Elimination:

Make sure the engine cooling system is working properly.

EMS 45824

Blocks:

2098557, 2098556

Title:

Engine shutdown

Fault:

A function that, under normal conditions, stops the engine due to low oil pressure, low coolant level or high coolant temperature, was prohibited.

The reasons:

The engine stop function has been selected by the user.

Notes:

Elimination:

The DTC is an informational message only about the use of the ignore engine shutdown procedure function. In this regard, be careful not to damage the engine.

EMS 46080

Blocks:

2098557, 2098556

Title:

Parameter value for fuel supply drive

Fault:

An invalid value was entered for the throttle control parameter in the control unit.

The reasons:

When changing with an instrument other than SDP3, an invalid parameter value is entered.

Notes:

While this DTC is active, i.e. while the fuel supply control system is faulty or the CAN bus connection is broken, the engine runs at a low idle speed.

Elimination:

Set the correct parameter value using SDP3.

EMS 46336

Blocks:

2098557, 2098556

Title:

Coolant level sensor.

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the coolant level sensor circuit.

Fault in the electrical circuit of the oil temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The oil pressure sensor, oil temperature sensor and coolant level sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The coolant level cannot be determined until the malfunction has been rectified.

Elimination:

Check the oil pressure sensor, oil temperature sensor and coolant level sensor with connectors and electrical wiring.

EMS 46337

Blocks:

2098557, 2098556

Title:

Coolant level sensor.

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the coolant level sensor circuit.

Fault in the electrical circuit of the oil temperature sensor or electrical circuit of the oil pressure sensor.

Notes:

The oil pressure sensor, oil temperature sensor and coolant level sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

The coolant level cannot be determined until the malfunction has been rectified.

Elimination:

Check the oil pressure sensor, oil temperature sensor and coolant level sensor with connectors and electrical wiring.

EMS 46592

Blocks:

2098557, 2098556

Title:

Charge air temperature

Fault:

The charge air temperature exceeds the programmed limit value.

The reasons:

The charge air temperature exceeds the programmed limit value.

Notes:

To protect the engine from overheating, the maximum engine torque is reduced by 30%.

Elimination:

Check the engine cooling system for proper operation.

EMS 46593

Blocks:

2098557, 2098556

Title:

Charge air temperature

Fault:

The charge air temperature exceeds the programmed limit value.

The reasons:

The charge air temperature exceeds the programmed limit value.

Notes:

The engine is turned off for protection against overheating and subsequent damage.

Elimination:

Check the engine cooling system for proper operation.

EMS 46848

Blocks:

2098557, 2098556

Title:

Charge air pressure

Fault:

The charge air pressure for some period exceeded the programmed limit value.

The reasons:

The charge air pressure for some period exceeded the programmed limit value.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%.

Elimination:

Check bypass valve and associated control system.

EMS 49152

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49155 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49153

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49155 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49154

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49155

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49156

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49157

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49158

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 1

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 49408

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49411 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49409

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49411 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49410

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49411

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49412

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49413

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49414

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 2

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 49423

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901

Title:

EMS and EEC control units

Fault:

The engine control unit EMS and the control unit EEC, which is responsible for the treatment of exhaust gases, are incompatible. They give different versions of codes.

The reasons:

Incompatible software or hardware versions.

Notes:

Malfunction may result in increased exhaust emissions.

Elimination:

Check for software version compatibility in control units.

Check the compatibility of the hardware versions in the control units.

EMS 49511

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Immobilizer

Fault:

Failed confirmation of the correctness of the ignition key or unsuccessful validation of data between the coordinator and the engine control unit.

The engine control unit could also be turned off in the wrong way.

The reasons:

Possible causes of failure:

The coordinator was disconnected while the engine control unit was starting up or the coordinator was unable to confirm the correct ignition key.

The ignition voltage (U15) was turned on and then off again in a very short time (less than 1 second) one or more times.

The battery voltage (U30) was turned off to the ignition voltage (U15), for example, when the battery was prematurely disconnected using the battery ground switch.

Notes:

Starter locked. If the vehicle speed exceeds 20 km / h, the engine speed drops to 500 rpm until the DTC is active.

If the vehicle speed is below 20 km / h, the fuel supply is interrupted, the engine is turned off and cannot be started until the DTC is active.

Elimination:

It is only necessary to delete the fault code if no fault codes were generated in the coordinator and the driver did not notice any faults. If any trouble codes are recorded in the coordinator's memory, start troubleshooting.

After completing the troubleshooting, erase the trouble code from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 49664

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 49667 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49665

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 49667 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also

check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49666

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49667

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49668

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49669

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49670

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 3

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 49920

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49923 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49920

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Incorrect CAN version

Fault:

The engine control unit and the coordinator do not agree on which CAN version is used.

The reasons:

A malfunction occurs if the engine control unit or coordinator has been replaced and is not compatible with each other.

Notes:

A fault causes the starter to lock.

Elimination:

Check the engine control unit and coordinator spare part numbers. Replace the control unit with the wrong part number.

EMS 49921

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 49923 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49922

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49923

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 49924

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49925

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid

valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 49926

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 4

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 49958

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Immobilizer

Fault:

Failed data validation while saving data.

The reasons:

The engine management system is not in a programmable mode.

The coordinator was unable to save information about the new key. The fault may also be due to the fact that the engine check was not confirmed in the coordinator.

Notes:

Starter locked. If the vehicle speed exceeds 20 km / h, the engine speed drops to 500 rpm until the DTC is active.

If the vehicle speed is below 20 km / h, the fuel supply is interrupted, the engine is turned off and cannot be started until the DTC is active.

Elimination:

It is only necessary to delete the fault code if no fault codes were generated in the coordinator and the driver did not notice any faults. If any trouble codes are recorded in the coordinator's memory, start troubleshooting.

After completing the troubleshooting, erase the trouble code from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 50176

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 50179 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50177

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If at the same time a malfunction code 50179 was generated, it is possible that this is a consequence of a short circuit in the solenoid valve or wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50178

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50179

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50180

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50181

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.
Clear the DTC memory and start the engine.
If the DTC remains active, replace the pump injector.

EMS 50182

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 5

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.
Clear the trouble code memory.
Start the engine. If this DTC is generated again, replace the pump injector.

EMS 50214

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Immobilizer

Fault:

Failed data validation while saving data.

The reasons:

When checking the data was used the wrong key.

Notes:

Starter locked. If the vehicle speed exceeds 20 km / h, the engine speed drops to 500 rpm until the DTC is active.

If the vehicle speed is below 20 km / h, the fuel supply is interrupted, the engine is turned off and cannot be started until the DTC is active.

Elimination:

It is only necessary to delete the fault code if no fault codes were generated in the coordinator and the driver did not notice any faults. If any trouble codes are recorded in the coordinator's memory, start troubleshooting. After completing the troubleshooting, erase the trouble code from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 50432

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 50435 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50433

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 50435 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50434

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50435

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50436

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50437

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50438

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 6

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 50688

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 50691 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50689

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code 50691 was generated at the same time, it is possible that this is due to a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50690

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50691

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50692

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50693

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50694

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 7

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 50944

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Too fast increase of current in the coil of the solenoid valve pump-nozzle.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code of 50947 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50945

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Too rapid increase in current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to a too low resistance of the solenoid valve.

If a malfunction code of 50947 was generated at the same time, it is possible that this is a consequence of a short circuit in the solenoid valve or the wiring. In addition, it is possible that a short circuit has occurred between the valve cover and one of the terminals on the solenoid valve.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50946

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Too slow increase of current in the winding of the solenoid valve. The rise time of the current is determined by the control unit, depending on the voltage of the battery and the temperature of the coolant.

The reasons:

The fault may be due to too high resistance, the reason for which may be:

Open circuit between control unit and solenoid valve.

Damaged wiring.

Open circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50947

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Solenoid driver warns of malfunction.

The reasons:

This fault may be caused by a short circuit in the wiring, a short circuit in the solenoid valve, or a short circuit inside the control unit.

Notes:

The engine control unit is programmed in such a way that if any faults occur in individual cylinders that are not critical, these cylinders will continue to work. In the case of some types of short circuits, the work of several cylinders is disrupted at once. Fault codes will be recorded for all cylinders operating with violations.

If fault codes were generated for two or more cylinders, the maximum engine torque will be reduced by 30%.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the resistance of the coil of the solenoid valve. Electrical resistance should be equal to 0.4-0.6 ohms. Also check the resistance between the solenoid valve connector and the motor. If the resistance is less than 100 ohms, there may be a short circuit.

Clear the trouble code memory.

If there is a malfunction, replace the injector pump first and then the control unit.

EMS 50948

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

No signal to close the pump solenoid valve.

The reasons:

Short circuit or open circuit injectors.

Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

It is also possible for air to enter the fuel line.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50949

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Too early closing of the solenoid valve injectors. The injection advance angle is earlier than required.

The reasons:

It is also possible for air to enter the fuel line.

This fault can also be caused by a short circuit or a break in the electrical circuit of the pump-injector. Solenoid valve malfunction pump-injector or mechanical failure of the pump-injector.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Make sure the fuel line to the injector pump is working properly.

Remove air from the fuel system.

Clear the DTC memory and start the engine.

If the DTC remains active, replace the pump injector.

EMS 50950

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Pump nozzle cylinder 8

Fault:

Too late closing of the solenoid valve pump nozzle. The injection advance angle is later than required.

The reasons:

The cause of the malfunction may be a jamming of the solenoid valve or an excessively high resistance of the wiring.

Notes:

As a result, there may be some uneven operation of the engine.

Elimination:

Check the wiring and clean the connector.

Clear the trouble code memory.

Start the engine. If this DTC is generated again, replace the pump injector.

EMS 53248

Blocks:

2110163, 2110160

Title:

Fuel pressure sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the sensor circuit.

A fault can also be caused by a fault in other sensors with a common power supply circuit. If, at the same time, the memory code of the oil pressure sensor is recorded in the memory, a defect in the common internal power supply is possible.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, coolant temperature sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 53249

Blocks:

2110163, 2110160

Title:

Fuel pressure sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit sensor circuit.

A fault can also be caused by a fault in other sensors with a common power supply circuit. If, at the same time, the memory code of the oil pressure sensor is recorded in the memory, a defect in the common internal power

supply is possible.

Malfunction in the electrical circuit of the charge air pressure sensor, charge air temperature sensor, coolant temperature sensor or fan speed sensor.

Notes:

The coolant temperature sensor, the charge air pressure sensor, the charge air temperature sensor, the fuel line pressure sensor and the fan speed sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by approximately 30% while the fault code is active.

Elimination:

Check the coolant temperature sensor, charge-air pressure sensor, charge-air temperature sensor, fuel line pressure sensor and fan speed sensor along with connectors and electrical wires of electrical circuits.

EMS 53250

Blocks:

2110163, 2110160

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 53252

Blocks:

2110163, 2110160

Title:

Pressure in the fuel supply system

Fault:

The pressure in the fuel line significantly exceeds the set value.

The reasons:

The probable cause of the malfunction is a defect in the bypass valve. It is also possible that the drain line is clogged.

Notes:

A fault code will be recorded only if the pressure in the fuel line exceeds the set value for 7 seconds or a longer time interval. This time period was set to avoid writing code due to short-term pressure fluctuations not caused by functional deviation.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed). As a result of this malfunction, uneven engine operation and increased smoke can occur.

Elimination:

Check the electrical components, electrical connectors and wiring.

Check the bypass valve and fuel return line.

EMS 53253

Blocks:

2110163, 2110160

Title:

Pressure in the fuel supply system

Fault:

The pressure in the fuel line is well below the set value.

The reasons:

Possible causes of failure:

One of the two relief valves opens at too low a pressure.

The fuel shut-off solenoid valve remains closed.

The fuel filter is clogged.

Air in the fuel or lack of fuel in the tank.

Malfunctioning booster pump.

Significant fuel leak from the system.

Notes:

A fault code will only be generated if the supply pressure is below the allowable pressure for at least 7 seconds. This time period was set to avoid writing code due to short-term pressure fluctuations not caused by functional

deviation.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

With this fault, the engine torque is reduced by 30% while the fault code is active (confirmed).

Elimination:

Check for fuel in the tank and bleed the fuel system to remove air from it.

Check the opening pressure of both relief valves.

Check the position of the fuel shut-off solenoid valve.

Check the condition of the fuel filter.

Check the fuel priming pump.

Check the tightness of the fuel system.

If a malfunction has appeared while the car is coasting (when the car is going to descend with the accelerator pedal fully released), then you can use the “Stored operational data” engine parameters stored in the memory to analyze the fault. See “Feed Pressure” section. If the pressure deviation in the fuel line for a specified time interval is -1.0 bar or more, then the fuel filter may be clogged. If there is no significant pressure deviation in the fuel line, then this may be due to jamming of the bypass valve in the open position.

EMS 53264

Blocks:

2110163, 2110160

Title:

Pressure in the fuel supply system

Fault:

Feed pressure for a period exceeding the allowable value.

The reasons:

Possible reasons:

The pressure sensor in the fuel line shows incorrect values.

Bypass valve malfunction.

Notes:

During the entire time when the pressure in the fuel line exceeds the set value, the fuel shut-off solenoid valve is closed. If the fuel pressure sensor is faulty, then the fuel shut-off solenoid valve when the engine is running is constantly open.

The oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check the oil pressure sensor, fuel temperature sensor and mass flow sensor with connectors and electrical wiring.

Make sure the bypass valve opens.

EMS 53504

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN message

Fault:

The engine control unit does not receive a message from the coordinator.

The reasons:

The connection between the engine control unit and the coordinator has been broken.

If the fault code was generated only once, this may be due to the interruption of the supply of voltage to the coordinator while maintaining the supply of voltage to the engine control unit. If this DTC is generated frequently, it may be due to a problem in the wiring or connectors.

Notes:

The inability to start the engine while there is a malfunction.

If this malfunction occurs when the engine is running, it will lead to a transition to the rotational speed of the emergency operation mode – 750 rpm.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the ignition with the ignition key several times.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53504

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Contact with coordinator

Fault:

The engine control unit does not receive from the coordinator unit messages about the current position of the accelerator pedal, the braking system, the inclusion of the starter and air conditioning, the operation of the torque limiting system and other systems.

The reasons:

Lost communication between engine control unit and coordinator.

If the DTC was generated only once, this may be due to the interruption of the supply of voltage to the

coordinator while maintaining the supply of voltage to the engine control unit. If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If fault code 5687 was generated at the same time, there may be a fault in the engine control unit. If this fault code was generated and fault code 5687 is not, it is possible that there is a fault in the wiring.

Notes:

The inability to start the engine while there is a malfunction.

If this malfunction occurs when the engine is running, pressing the accelerator pedal is ignored. The car can continue driving at minimum speed.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53505

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Contact with coordinator

Fault:

The engine control unit does not receive information from the coordinator regarding the tachograph.

The reasons:

Lost communication between engine control unit and coordinator.

If the DTC was generated only once, this may be due to the interruption of the supply of voltage to the coordinator while maintaining the supply of voltage to the engine control unit. This may be due to the replacement of a coordinator or tachograph.

If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If this fault code was generated and fault code 5687 is not, it is possible that there is a fault in the wiring. If fault code 5687 was generated at the same time, there may be a fault in the engine control unit.

Notes:

As a result of this fault, the vehicle speed is set at 15 km / h. In this case, cruise control and engine power take-off equipment do not work.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53505

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN message

Fault:

The engine control unit does not receive information from the coordinator regarding the tachograph.

The reasons:

Communication between engine control unit and tachograph is broken.

Notes:

No description

Elimination:

Check and erase the trouble codes in the coordinator. Check CAN wiring.

EMS 53506

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN message

Fault:

The engine control unit does not receive the cruise control message from the coordinator.

The reasons:

The connection between the engine control unit and the coordinator has been broken.

If the fault code was generated only once, it may be due to the replacement of the coordinator.

If this DTC is generated frequently, it may be due to a problem in the wiring or connectors.

Notes:

The malfunction leads to operation with an increased idle speed of 750 rpm while the malfunction is active.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the ignition

with the ignition key several times.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53506

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Contact with coordinator

Fault:

The engine control unit does not receive from the coordinator unit any messages about the braking system, cruise control, clutch and other systems.

The reasons:

Lost communication between engine control unit and coordinator.

If the fault code was generated only once, this may be due to the replacement of the coordinator.

If fault code 5687 is simultaneously generated, replace the control module.

If this DTC is generated, and DTC 5687 is not, there may be a problem with the wiring or loose connections.

If a fault code is generated frequently, it is possible that the wiring is faulty or the connectors of the brake system or cruise control switches are loose.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53507

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Contact with coordinator

Fault:

The engine control unit does not have a CAN message from the coordinator on pins B1 / 9 and B1 / 10.

The reasons:

Lost communication between engine control unit and coordinator.

If the fault code was generated only once, this may be due to the replacement of the coordinator.

If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If this fault code was generated and fault code 5687 is not, it is possible that there is a fault in the wiring. If fault code 5687 was generated at the same time, there may be a fault in the engine control unit.

Notes:

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

General troubleshooting: Turn off and turn on the onboard power supply with the ignition key.

If the DTC is still active, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the onboard power supply with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

EMS 53507

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN message

Fault:

The engine control unit does not have a CAN message from the coordinator.

The reasons:

The engine control unit does not receive a message from the coordinator about the diesel particulate filter, cruise control, outdoor temperature, or air conditioner operation.

The connection between the engine control unit and the coordinator has been broken.

If the fault code was generated only once, it may be due to the replacement of the coordinator.

If this DTC is generated frequently, it may be due to a problem in the wiring or connectors.

Notes:

For certain signals, while the DTC is active, pre-programmed values are used. This may affect engine power.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Switch the ignition on and off with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53508

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN message

Fault:

The engine control unit does not have a CAN message from the coordinator.

The reasons:

The engine control unit does not have a CAN message from the coordinator.

Notes:

The engine control unit does not receive a message from the coordinator about the outside temperature.

The connection between the engine control unit and the coordinator has been broken.

If the fault code was generated only once, it may be due to the replacement of the coordinator.

If this DTC is generated frequently, it may be due to a problem in the wiring or connectors.

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Switch the ignition on and off with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53508

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Contact with coordinator

Fault:

The engine control unit does not have a CAN message from the coordinator on pins B1 / 9 and B1 / 10.

The reasons:

Lost communication between engine control unit and coordinator.

If the fault code was generated only once, this may be due to the replacement of the coordinator.

If this DTC is generated frequently, it may be due to wiring problems or loose connectors.

If this fault code was generated and fault code 5687 is not, it is possible that there is a fault in the wiring. If fault code 5687 was generated at the same time, there may be a fault in the engine control unit.

Notes:

No description

Elimination:

General Troubleshooting: Clear the DTC memory and check the engine start. Turn off and turn on the onboard power supply with the ignition key.

If the DTC reappears, check the wiring and clean the electrical connectors. If this does not help, make sure that the control units simultaneously receive the on / off voltage of the ignition voltage (U15).

If this check does not give a positive result, then replace the coordinator block. If this does not help, replace the engine control unit.

Do not forget to read and erase the trouble codes from the memory of the coordinator unit.

EMS 53509

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal for brake pedal

Fault:

The engine control unit received a message on the CAN bus about the wrong signal for the brake pedal.

The reasons:

Wrong signal or no signal from the brake pedal.

Notes:

No description

Elimination:

Check for fault codes in the coordinator.

EMS 53510

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal for clutch.

Fault:

The engine control unit received a message on the CAN bus about the wrong signal for the clutch pedal or automatic clutch.

The reasons:

Wrong or missing signal from coordinator or Opticruise control unit, OPC.

Notes:

Cruise control is inactive.

Elimination:

Check for the presence of fault codes in the coordinator or in the Opticruise control unit, OPC.

EMS 53511

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal for kick-down switch

Fault:

The engine control unit on the CAN bus received a signal that the kick-down switch is connected to the coordinator unit.

The reasons:

Wrong signal for kick-down switch.

Notes:

The kick-down switch does not work.

Elimination:

Check for fault codes in the coordinator.

EMS 53512

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal for starter

Fault:

The engine control unit received on the CAN bus a message about the wrong signal for the starter.

The reasons:

Open circuit in CAN wiring or coordinator malfunction.

Notes:

Starter cannot be turned on.

Elimination:

Check for fault codes in the coordinator.

EMS 53513

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal for idling

Fault:

Signal failure from the low idle speed switch.

The reasons:

Signal failure from the low idle speed switch.

Notes:

Activated increased idling speed. Engine speed limitation has low priority.

Elimination:

Check for fault codes in the coordinator.

EMS 53514

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Immobilizer

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

The battery (voltage U30) was turned off until the voltage from the ignition switch (voltage U15) stopped. (This may be the case when the battery is disconnected prematurely.)

The engine control unit is not associated with the coordinator.

Notes:

Starter locked. If the vehicle speed exceeds 20 km / h, the engine speed drops to 500 rpm until the DTC is active.

If the vehicle speed is below 20 km / h, the fuel supply is interrupted, the engine is turned off and cannot be started until the DTC is active.

Elimination:

It is only necessary to delete the fault code if no fault codes were generated in the coordinator and the driver did not notice any faults. If any trouble codes are recorded in the coordinator's memory, start troubleshooting.

After completing the troubleshooting, erase the trouble code from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 53515

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Wrong signal from coordinator

Fault:

The coordinator transmitted a signal that is not supported by the engine management system.

The reasons:

The car has the wrong version of the coordinator or the wrong version of the software coordinator.

Notes:

A malfunction may result in incorrect operation of other vehicle control units.

Elimination:

Make sure that the part number of the coordinator corresponds to the vehicle specification.

If the spare part number is incorrect: Replace the coordinator.

If the spare part number is correct: Use SDP3 to program spare parts. If the problem persists, replace the coordinator.

EMS 53516

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

CAN messages

Fault:

CAN messages are lost between the engine control unit and the ME7.

The reasons:

Possible reasons:

They were not synchronized at startup.

An open in the CAN bus circuit between control units.

Low battery voltage.

Notes:

Failsafe mode: limiting torque and engine speed.

Elimination:

Check CAN bus, power circuit and ground.

Replace the ME7 unit.

EMS 53517

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Signal from Opticruise control unit, OPC.

Fault:

The engine control unit has lost contact with the OPC control unit or has received a shutdown request from the OPC control unit.

The reasons:

Possible causes of a malfunction are loss of communication with OPC or the fact that OPC has sent a request to turn off the engine.

Notes:

When the engine is off The red indicator lamp in the instrument panel is on.

Elimination:

Check the OPC DTCs.

Check the electrical components, electrical connectors and wiring.

EMS 54016

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the electromagnetic valve of the amount of fuel for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54017

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the electromagnetic valve of the amount of fuel for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54018

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

There is no signal to control the fuel supply of the front group of cylinders (cylinders 1-3).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54019

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid control valve for the fuel supply of the front group of cylinders (cylinders 1-3) are very different from those of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54020

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

Solenoid valve for controlling the supply of fuel to the front group of cylinders (cylinders 1-3) is supplied with too low a voltage.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. The moment reduction occurs during only that time when the wrong code is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If fault code 12801 was also generated, first correct the problems associated with the battery.

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 54272

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the solenoid valve of the amount of fuel for the back row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54273

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the solenoid valve of the amount of fuel for the back row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54274

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

There is no signal to control the fuel supply to the rear group of cylinders (cylinders 4-6).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54275

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve for controlling the fuel supply of the rear group of cylinders (cylinders 4-6) are very different from those of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54276

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The rear cylinder group fuel control solenoid valve (cylinders 4-6) is supplied with too low a voltage.

The reasons:

The cause of the malfunction may be a malfunction of the battery or a malfunction of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. The moment reduction occurs during only that time when the wrong code is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If fault code 12801 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 54292

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Signal from accelerator pedal position sensor

Fault:

The engine control unit on the CAN bus received a message stating that the current position of the accelerator pedal is outside the acceptable range. The accelerator pedal position sensor is connected to the coordinator unit.

The reasons:

Accelerator pedal position information cannot be read.

Notes:

Activated increased idling speed.

Elimination:

Check the status of the software in the coordinator and in the engine control unit.

Check the coordinator block for fault codes pertaining to the accelerator pedal. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC appears again, replace the accelerator pedal coordinator or sensor and test drive the car again within 10 minutes.

If the DTC appears again, replace the engine control unit.

EMS 54293

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Signal from accelerator pedal position sensor

Fault:

Accelerator pedal sensor gives an incredible value.

The reasons:

The accelerator pedal sensor, coordinator and engine control unit cannot match the correct value.

Notes:

Activated increased idling speed.

Elimination:

Check the software version in the coordinator and in the engine control unit.

Check the memory for the coordinator for the accelerator pedal. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC appears again, check the status of the software in the coordinator and in the engine control unit. Clear the DTC and test drive the car for 10 minutes.

If the DTC appears again, replace the accelerator pedal coordinator or sensor and test drive the car again within 10 minutes.

If the DTC appears again, replace the engine control unit.

EMS 54294

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for atmospheric pressure

Fault:

The engine control unit received a message on the CAN bus about the wrong signal from the atmospheric pressure sensor, which is connected to the coordinator.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine control unit uses an atmospheric pressure of 1013 kPa.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Perform diagnostics using the coordinator.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 54295

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for outdoor temperature

Fault:

The engine control unit received a message on the CAN bus about the wrong signal from the outside temperature sensor, which is connected to the coordinator.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine control unit uses an outside temperature of 25 ° C.

The fault affects the emission of nitrogen oxides (NOx) by the car, and a warning lamp lights up in the instrument cluster, warning of a high level of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC limits the maximum engine torque to approximately 40% after the engine has been running for 50 hours.

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Perform diagnostics through the coordinator.

Continue as follows to ensure that the problem is resolved:

Turn off and turn on the ignition with the ignition key.

If the fault is resolved, the fault code becomes inactive. Clear the fault code.

To turn off the alarm, turn off and turn on the ignition with the ignition key three times in a row at 10-second intervals.

EMS 54296

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 2110164, 2110165, 2110166, 2110162, 2110116, 9000000, 2089202, 2089201, 2089200

Title:

Signal from accelerator pedal position sensor

Fault:

The engine control unit and the coordinator receive unmatched data on the position of the accelerator pedal.

The reasons:

The coordinator sends a CAN signal about the kick-down mode, but the accelerator pedal sensor does not indicate that the accelerator pedal is fully depressed.

Notes:

Activated increased idling speed.

Elimination:

Check the memory for the coordinator for the accelerator pedal. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC appears again, first replace the coordinator or accelerator pedal sensor. Clear the trouble codes and test drive the car for 10 minutes.

If the DTC remains active, replace the engine control unit.

EMS 54297

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Pedal positions

Fault:

Constantly turned on switch “kickdown” (accelerator pedal is not in the extreme position).

The reasons:

Internal malfunction in the control unit.

Notes:

If this DTC is stored in memory, the activation of the kickdown is ignored.

Elimination:

Check the coordinator block for fault codes pertaining to the accelerator pedal. Erase the trouble codes from the memory and test drive the car. During the trip, depress the accelerator pedal as far as it will go.

If the DTC remains active, replace the coordinator. Erase the trouble codes from the memory and test drive the car. During the trip, depress the accelerator pedal as far as it will go.

If the DTC remains active, replace the engine control unit.

EMS 54528

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54529

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the front row of cylinders (cylinders 1-3) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54530

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

There is no control signal for the advance injection angle of the front group of cylinders (cylinders 1-3).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54531

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve control the injection advance timing of the front group of cylinders (cylinders 1-3) are very different from the parameters of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54532

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The electromagnetic valve of control of the injection timing of the front group of cylinders (cylinders 1-3) is energized too low.

The reasons:

Cause may be a malfunction of the battery or failure of the solenoid valve. There may also be faults within the control unit itself.

Notes:

In the presence of this fault maximum engine torque is reduced by 30%. Reduction of the moment occurs during only that time when the DTC is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If fault code 12801 was also generated, first correct the problems associated with the battery. Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, replace the first solenoid valve and then, if necessary the control unit.

EMS 54784

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the rear row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short circuit in the valve circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54785

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The voltage in the electrical circuit for the injection timing advance solenoid valve for the rear row of cylinders (cylinders 4-6) was out of range.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine

and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54786

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

There is no control signal for the injection timing of the rear cylinder group (cylinders 4-6).

The reasons:

Solenoid valve malfunction or valve open circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54787

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The signal parameters of the solenoid valve control the injection advance timing of the rear cylinder group (cylinders 4-6) are very different from the parameters of the signals of other solenoid valves.

The reasons:

Solenoid valve malfunction or short to ground in circuit.

Notes:

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the DTC remains active, replace the solenoid valve.

EMS 54788

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The injection timing advance solenoid valve of the rear cylinder group (cylinders 4-6) is supplied with too low a voltage.

The reasons:

Cause may be a malfunction of the battery or failure of the solenoid valve. There may also be faults within the control unit itself.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%. Torque reduction occurs for only the time when the fault code is active.

Uneven operation of the engine caused by a malfunction of the fuel line.

Elimination:

If fault code 12801 was also generated, first correct the problems associated with the battery.

Check the electrical components, electrical connectors and wiring. Then clear the DTC memory, start the engine and increase its engine speed. Make sure that the engine runs smoothly and that it reacts normally to the accelerator. If the fault persists, first replace the solenoid valve and then, if necessary, the control unit.

EMS 55040

Blocks:

2110163, 2110160

Title:

Fuel shutoff valve

Fault:

High voltage is constantly applied to the outputs of the fuel shut-off solenoid valve.

The reasons:

Open wiring solenoid fuel supply stop or interruption of the winding of the valve itself. The cause of the fault

may also be a short circuit to the wire connected to the positive terminal of the battery.

Notes:

If an open circuit occurs, the fuel cut-off solenoid valve closes and the engine stops.

In the event of a short circuit, the fuel shut-off solenoid valve will be constantly open.

Elimination:

Check the wiring and fuel shut-off solenoid valve.

EMS 55041

Blocks:

2110163, 2110160

Title:

Fuel shutoff valve

Fault:

The fuel shut-off solenoid valve does not work.

The reasons:

Short circuit or “weight” in the chain of the fuel cutoff valve.

Notes:

The fuel shut-off valve will work and the engine will lose power.

Elimination:

Check the wiring and fuel shut-off solenoid valve.

EMS 55046

Blocks:

2110163, 2110160

Title:

Fuel shutoff valve

Fault:

When the engine is stopped by turning off the fuel shut off valve, the fuel pressure in the low pressure line drops very slowly.

The reasons:

Fuel shut-off valve stuck open.

If a malfunction code of 55040 or 55041 was also generated, there may be a short circuit in the electrical circuit. Otherwise, either the fuel shut-off valve or the fuel supply pressure sensor is faulty.

Notes:

When the engine is turned off with the ignition key, the solenoid valves will continue to try to keep the engine running, while the fuel shut-off solenoid valve sends a signal to turn off the engine. If this fails, i.e. the pressure in the fuel line will not decrease, a malfunction code is generated, after which the engine is turned off by the electromagnetic valves.

The fault code is generated only in the case of three consecutive failed attempts to shut down.

While the fault is active, the maximum engine torque is reduced by 30%.

Since the DTC is generated when the engine is turned off, it can only be deleted after the engine has been successfully turned off.

Please note that the oil pressure sensor, fuel temperature sensor and mass flow sensor have a common power supply. In the event of a fault in one of the sensors, it may affect the electrical circuits of the other sensors.

Elimination:

Check whether a malfunction code of 55040 or 55041 has been generated. If so, check the fuel shut-off valve and the wiring.

If trouble code 55040 or 55041 was not generated, first replace the fuel shut-off valve and then, if necessary, the pressure sensor in the fuel line.

As a last resort, replace the alternator charge controller.

EMS 55296

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. Does the trouble code

remain active? If the code is written to memory again, replace the control unit.

EMS 55297

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. Does the trouble code remain active? If the code is written to memory again, replace the control unit.

EMS 55298

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. Does the trouble code remain active? If the code is written to memory again, replace the control unit.

EMS 55299

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. Does the trouble code remain active? If the code is written to memory again, replace the control unit.

EMS 55300

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

With this fault, the maximum torque of the engine is reduced by 30%.

As a result, engine unevenness may occur.

Elimination:

Clear the trouble code memory. Start the engine and increase the speed several times. Does the trouble code

remain active? If the code is written to memory again, replace the control unit.

EMS 55552

Blocks:

2110163, 2110160

Title:

Fuel temperature sensor

Fault:

The voltage in the circuit exceeded the permissible level.

The reasons:

Possible reasons:

An open in the fuel temperature sensor circuit.

Malfunction of the electrical circuit of the oil pressure sensor or electrical circuit of the mass flow sensor.

Notes:

An oil pressure sensor, fuel sensor, and a mass flow sensor have shared voltage. In case of malfunction in one of the sensors, it can affect electrical circuits other sensors.

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 55553

Blocks:

2110163, 2110160

Title:

Fuel temperature sensor

Fault:

The voltage in the circuit has fallen below acceptable levels.

The reasons:

Possible reasons:

Short circuit in the fuel temperature sensor circuit.

Malfunction of the electrical circuit of the oil pressure sensor or electrical circuit of the mass flow sensor.

Notes:

An oil pressure sensor, fuel sensor, and a mass flow sensor have shared voltage. In case of malfunction in one of the sensors, it can affect electrical circuits other sensors.

If the signal voltage is outside the acceptable range, the control unit uses a pre-programmed value.

Elimination:

Check the oil pressure sensor, fuel temperature sensor, mass flow sensor and connectors and electrical wiring of electrical circuits.

EMS 55554

Blocks:

2110163, 2110160

Title:

Control block

Fault:

The control unit could not convert the signal from the sensor.

The reasons:

Internal malfunction in the control unit.

Notes:

If the signal voltage is outside the acceptable range, the control unit uses the preprogrammed value.

Elimination:

Clear the DTC memory, start the engine and increase its speed. If this DTC is generated again, replace the control unit.

EMS 57088

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The torque developed by the front group of cylinders (cylinders 1-3) significantly exceeds the torque developed by the rear group of cylinders (cylinders 4-6).

The reasons:

A malfunction may be due to a failure of one of the fuel supply solenoid valves or an injection advance, which causes an incorrect engine torque for one row of cylinders. This may be due to the following reasons:

One of the front row solenoid valves of the cylinders supplying too much fuel (too high torque) to cylinders 1-3.
One of the solenoid valves in the rear row of cylinders that supplies too little fuel (too low torque) to cylinders 4-6.

If the engine produces a higher power than usual, immediately before the malfunction code is generated, one of the front row solenoid valves may be faulty.

If the engine produces a lower power than usual, immediately before the malfunction code is generated, one of the solenoid valves in the back row of cylinders may be faulty.

A fault code can also be generated even if there is no fault in any of the solenoid valves. In some cases, the DTC is caused by faulty pump injectors or fluctuations in the transmission caused by driving conditions.

Notes:

Engine may operate unevenly.

To protect the engine, the maximum engine torque is reduced by 30%.

To generate a DTC, the fault must be present for 6 seconds. If the fault disappears, after three seconds the engine will return to normal operation.

Elimination:

To determine whether one of the solenoid valves causes a malfunction, proceed as follows : Switch the solenoid valves so that both the front row solenoid valves are responsible for the rear row and vice versa. Perform a road test car. Attach a load to the engine by performing a full load ride.

If fault code 57090 has now been generated, one of the solenoid valves is a possible cause. Replace solenoid valves on the same row of cylinders. Clear the trouble code memory. Perform a road test car. Attach a load to the engine by performing a full load ride.

If the fault persists, replace the solenoid valves on another row of cylinders.

To see if there is something wrong with one of the pump injectors, look at the cylinder balance in the Scania program Diagnos “.

EMS 57089

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The torque developed by the front group of cylinders (cylinders 1-3) significantly exceeds the torque developed by the rear group of cylinders (cylinders 4-6).

The reasons:

One of the fuel control or solenoid injection timing solenoid valves does not work correctly. In this case, the torque developed by one of the two groups of cylinders does not correspond to the specified value. This may be due to the fact that an excess amount of fuel enters the front group cylinders or too little fuel enters the rear group cylinders.

If the engine is gaining momentum, the front-group cylinder fuel control solenoid valve is stuck in a position

where too much fuel flows into the cylinders.

If the engine is slowing down, the rear cylinder fuel control solenoid valve is stuck in a position where there is too little fuel in the cylinders.

If the engine drops speed and white smoke appears with the exhaust gases, then the solenoid valve for controlling the injection timing of the rear cylinder group lets in insufficient amount of fuel. Fuel injection starts so late that the fuel can not be ignited.

A malfunction may also be caused by leakage of the sealing rings on the pump nozzles.

Notes:

Uneven engine performance due to engine speed limiting at 500 ... 550 rpm. The fuel shut-off solenoid valve is faulty.

Elimination:

If the engine starts to gain momentum, then replace the front cylinder group fuel control solenoid valve.

If the engine slows down, replace the rear cylinder fuel control solenoid valve.

If the engine has lost momentum and white smoke has appeared with the exhaust gases, then replace the solenoid valve controlling the advance angle of injection of the rear group of cylinders.

If you suspect a leak in the pump nozzles, replace all o-rings.

EMS 57090

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The torque developed by the rear group of cylinders (cylinders 4-6) significantly exceeds the torque developed by the front group of cylinders (cylinders 1-3).

The reasons:

A malfunction may be due to a failure of one of the fuel supply solenoid valves or an injection advance, which causes an incorrect engine torque for one row of cylinders. This may be due to the following reasons:

One of the solenoid valves in the rear row of cylinders that supplies too much fuel (too high torque) to cylinders 4-6.

One of the front-row solenoid valves of the cylinders supplying too little fuel (too low torque) to cylinders 1-3.

If the engine produces a higher power than usual, immediately before the malfunction code is generated, one of the solenoid valves in the back row of cylinders may be faulty.

If the engine produces a lower power than usual, immediately before the malfunction code is generated, one of the front row solenoid valves may be faulty.

A fault code can also be generated even if there is no fault in any of the solenoid valves. In some cases, the DTC is caused by faulty pump injectors or fluctuations in the transmission caused by driving conditions.

Notes:

Engine may operate unevenly.

To protect the engine, the maximum engine torque is reduced by 30%.

To generate a DTC, the fault must be present for 6 seconds. If the fault disappears, after three seconds the engine will return to normal operation.

Elimination:

To determine whether one of the solenoid valves causes a malfunction, proceed as follows : Switch the solenoid valves so that both the front row solenoid valves are responsible for the rear row and vice versa. Perform a road test car. Attach a load to the engine by performing a full load ride.

If fault code 57088 has now been generated, one of the solenoid valves is a possible cause. Replace solenoid valves on the same row of cylinders. Clear the trouble code memory. Perform a road test car. Attach a load to the engine by performing a full load ride.

If the fault persists, replace the solenoid valves on another row of cylinders.

To see if there is something wrong with one of the pump injectors, look at the cylinder balance in the Scania Diagnos program .

EMS 57091

Blocks:

2110163, 2110160

Title:

Fuel supply to cylinders

Fault:

The torque developed by the rear group of cylinders (cylinders 4-6) significantly exceeds the torque developed by the front group of cylinders (cylinders 1-3).

The reasons:

One of the fuel control or solenoid injection timing solenoid valves does not work correctly. In this case, the torque developed by one of the two groups of cylinders does not correspond to the specified value. This may be due to the fact that too little fuel flows into the front group cylinders or an excess amount of fuel flows into the rear group cylinders.

If the engine is gaining momentum, the rear cylinder fuel control solenoid valve is stuck in a position where there is too much fuel in the cylinders.

If the engine is slowing down, the front cylinder group fuel control solenoid valve is stuck in a position where there is too little fuel in the cylinders.

If the engine drops speed and white smoke appears with the exhaust gases, then the solenoid valve controlling the advance injection angle of the front group of cylinders lets in insufficient amount of fuel. Fuel injection starts so late that the fuel cannot ignite.

Notes:

Uneven engine performance due to engine speed limiting at 500 ... 550 rpm. The fuel shut-off solenoid valve is faulty.

Elimination:

If the engine starts to gain momentum, then replace the rear cylinder fuel control solenoid valve.

If the engine slows down, then replace the front cylinder group fuel control solenoid valve.

If the engine has lost momentum and white smoke has appeared with the exhaust gases, then replace the solenoid valve controlling the advance injection angle of the front cylinder group.

EMS 57344

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

Wrong signal transmitted by the control unit to the solenoid valve controlling the fuel supply to the front group of cylinders.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57345

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

Wrong signal transmitted by the control unit to the solenoid valve controlling the fuel supply to the rear cylinder group

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57346

Blocks:

2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57347

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

One of the engine speed sensors is faulty.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57348

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

One of the engine speed sensors is faulty.

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57349

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57350

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Incorrect or unreliable data.

The reasons:

Internal malfunction in the control unit.

Notes:

During the entire time when the detected fault appears, the fuel supply to the engine stops. If the fault period is sufficiently long, the engine may stop.

As a result, other trouble codes can be recorded in the memory of the control unit.

Elimination:

Clear the trouble codes and test drive the car for 10 minutes. The fault code remains active? If the code is written to memory again, replace the control unit.

EMS 57856

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

overheat protection

Fault:

Coolant temperature has exceeded 104 ° C.

The reasons:

This malfunction may be caused by the following reasons: low coolant level, coolant leakage or clogged radiator.

Notes:

At a temperature of 106 ° C, the maximum torque of the engine gradually decreases by 30%.

The instrument cluster lights up in the instrument cluster.

Elimination:

Check the coolant level and tightness of the cooling system. Make sure that the radiator is not clogged with dirt and sludge.

EMS 58112

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Control block

Fault:

Unreliable data.

The reasons:

The software in the control unit was changed incorrectly.

Notes:

The fault leads to activation of the fuel supply at the level of 0% and, as long as the fault is present, the engine speed is limited to the nominal idling speed.

Elimination:

Replace the control unit.

EMS 58880

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

CAN message from coordinator related to emergency stop

Fault:

An emergency stop button was used.

The reasons:

Emergency off switch pressed (grounded).

Notes:

If the car is stationary, the engine does not work.

If the car is in motion while there is a malfunction, this will lead to activation of the fuel supply control in the amount of 0% and normal rotational speed in idle mode. This allows the use of power steering and other systems.

The cruise control system is turned off and cannot be activated until the fault has been repaired.

The fault ceases to be active as soon as the emergency shutdown switch is reconfigured.

Elimination:

Check the switch, connectors and wiring.

EMS 58881

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

CAN message from coordinator related to emergency stop

Fault:

An emergency stop button was used.

The reasons:

The emergency shutdown switch, which in this case is connected to the connecting node to control the functions set by the bodybuilder, is pressed (grounded).

Notes:

If the vehicle speed is lower than the set speed (it can be adjusted in SDP3), but, a maximum of 20 km / h, the engine is turned off.

If the vehicle speed exceeds the set value, as long as there is a fault, this leads to activation of the fuel supply control in the amount of 0% and normal speed in idle mode. This allows the use of power steering and other systems.

The cruise control system is turned off and cannot be activated until the fault has been repaired.

The fault ceases to be active as soon as the emergency shutdown switch is reconfigured.

Elimination:

Check the switch, connectors and wiring.

EMS 59136

Blocks:

2098557, 2098556, 2110163, 2110160

Title:

Motor protection at startup

Fault:

The engine's rotational speed during start-up has exceeded the allowed value for a specified time interval (usually 1 second).

The reasons:

With the Scania Programmer , the function that limits the engine speed during start-up has been disabled. During start-up, the engine has exceeded the set speed.

Notes:

Immediately after starting the cold engine for a set time interval, the crankshaft speed is limited to 1000 rpm. This feature protects the engine from damage.

Elimination:

Notify the driver about the possibility of engine damage when the engine is running at high speeds.

EMS 61441

Blocks:

2098547, 2098546, 2098545, 2096902, 2096901, 9000000, 2089202, 2089201, 2089200

Title:

Disable engine control unit

Fault:

Incorrect procedure to turn off the engine control unit.

The reasons:

The power to the engine control unit was turned off prematurely.

This could be due to an incorrect engine stopping procedure with the ignition key or the engine being stopped using the ground switch.

The supply voltage can be interrupted if additional equipment is connected to the consumer.

Notes:

When checking in the engine killing mode, the control unit carries out a functional check of the components after switching off the ignition and saving the data. If the engine mute test is interrupted, not all data is saved correctly.

Elimination:

Always turn off the engine with the ignition key.

EMS 65424

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal to stop the engine from the coordinator

EMS 65425

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal to stop the engine from the control unit manufacturer of additional equipment

Fault:

The engine control unit on the CAN bus received a message about the malfunction of the remote control of the engine, connected to the control unit for the manufacturer of additional equipment.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine does not turn off.

Elimination:

Perform diagnostics using the bodybuilder control unit.

EMS 65426

Blocks:

2098557, 2098556, 2110163, 2110160v

Title:

Wrong idle speed request signal.

EMS 65427

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for parking brake

EMS 65428

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for starter

EMS 65429

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal to maintain descent speed with retarder motor brake

Fault:

The engine control unit on the CAN bus received a signal of a malfunction of the speed control switch during descent connected to the coordinator unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The speed control system during descent does not work.

Elimination:

Perform diagnostics using the coordinator.

EMS 65430

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for torque limiter

EMS 65431

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for speed limiter 2

EMS 65433

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for brake pedal

Fault:

The engine control unit on the CAN bus received a message about the failure of the brake pedal sensor connected to the coordinator unit or to the brake system control unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

Cruise control does not work. The special functions of the power take-off do not work.

Elimination:

Perform a diagnosis using the coordinator or brake control unit.

EMS 65434

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for clutch pedal

Fault:

The engine control unit on the CAN bus received a signal about the failure of the clutch pedal sensor connected to the coordinator unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine brakes do not stop. Not determined by the weight of the car.

Elimination:

Perform diagnostics using the coordinator.

EMS 65435

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for kick down switch

Fault:

The engine control unit on the CAN bus received a signal of a failure of the "kickdown" switch connected to the coordinator unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The kickdown switch does not work.

Elimination:

Perform diagnostics using the coordinator.

EMS 65436

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong cruise control signal

EMS 65437

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for air conditioning compressor

EMS 65438

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong cruise control signal

Fault:

The engine control unit on the CAN bus received a signal about the malfunction of the cruise control system connected to the coordinator unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

Cruise control, idle speed control and manual accelerator do not work.

Elimination:

Perform diagnostics using the coordinator.

EMS 65439

Blocks:

2098557, 209855, 2110163, 21101606, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for the engine retarder

EMS 65440

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for fast warm up mode

EMS 65441

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal from power take-off.

EMS 65442

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal from power take-off.

EMS 65443

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong car speed signal

Fault:

The engine control unit on the CAN bus received a message about the malfunction of the vehicle speed sensor installed on the secondary shaft of the gearbox and connected to the coordinator unit or to the tachograph.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

Functions such as speed limit will be affected.

Elimination:

Perform diagnostics using the coordinator and tachograph.

EMS 65444

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong car speed signal

Fault:

The engine control unit on the CAN bus received a message about the malfunction of the speed sensor of the vehicle connected to the coordinator unit or to the tachograph.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

By default, the vehicle speed is set to no more than 15 km / h. At the same time, cruise control and equipment related to engine power take-off do not work.

Elimination:

Perform diagnostics using the coordinator and tachograph.

EMS 65445

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for atmospheric pressure

Fault:

The engine control unit received a message on the CAN bus about the wrong signal from the atmospheric pressure sensor, which is connected to the coordinator.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine control unit uses an atmospheric pressure of 1013 kPa.

The fault affects the emission of nitrogen oxides (NOx) by the car , and a warning lamp lights up in the instrument cluster, warning of high levels of pollutants. On vehicles with NOx control, a text message is also displayed.

Cars with NOx control

An active DTC cannot be deleted from the control unit. When the malfunction is resolved so that the malfunction code becomes inactive, the control unit must ensure that the malfunction has been eliminated.

Elimination:

Perform diagnostics using the coordinator.

EMS 65446

Blocks:

2110164, 2110165, 2110166, 2110162, 2110116

Title:

Wrong signal for outdoor temperature

Fault:

The engine control unit received a message on the CAN bus about the wrong signal from the outside temperature sensor, which is connected to the coordinator.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

The engine control unit uses an outside temperature of 25 ° C.

Elimination:

Perform diagnostics using the coordinator.

EMS 65456

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Signal from accelerator pedal position sensor

Fault:

The engine control unit on the CAN bus received a message stating that the current position of the accelerator pedal exceeds 100%. The accelerator pedal position sensor is connected to the coordinator unit.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

Included emergency management strategy ("limp to the garage").

Elimination:

Check the coordinator block for fault codes pertaining to the accelerator pedal. Clear the DTC and test drive the car for 10 minutes.

If the DTC remains active, replace the coordinator. Clear the DTC and test drive the car for 10 minutes.

If the DTC remains active, replace the engine control unit.

EMS 65457

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Idle mode switch

Fault:

The engine control unit on the CAN bus received a message about the malfunction of the sensor-switch idling. Sensor switch idle connected to the block coordinator.

The reasons:

A malfunction code is generated because the primary malfunction code was generated in another control unit.

Notes:

If this DTC is stored in the memory, the control unit ignores pressing the accelerator pedal. The set engine speed of 750 rpm allows the vehicle to continue driving at minimum speed.

Elimination:

Check the coordinator block for fault codes pertaining to the accelerator pedal. Clear the DTC and test drive the car for 10 minutes.

If the DTC remains active, replace the coordinator. Clear the DTC and test drive the car for 10 minutes.

If the DTC remains active, replace the engine control unit.

EMS 65520

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator was not completed within the prescribed period of time.

The reasons:

Start voltage was interrupted before the end of the test.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.
Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.
EMS 65521

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator was not completed within the prescribed period of time.

The reasons:

It is possible that when starting the engine control unit the coordinator was disconnected. Or the coordinator was unable to confirm the validity of the ignition key.

A DTC can also be generated by generating DTC 53504 and 53506.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.

Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 65522

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

An incorrect key is inserted in the lock or the engine control unit is not synchronized with the coordinator unit.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.
Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.
EMS 65523

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

A malfunction occurred at a time when the coordinator tried to check the new ignition key. During initialization, the new ignition key of the engine control unit should not be synchronized with the coordinator unit.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.
Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.
EMS 65524

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

The check was performed with the wrong key.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.
Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 65525

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

Unknown message received during the verification process via CAN bus.

Notes:

With an active fault code, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

Perform diagnostics using the coordinator. If there is no fault code in the memory of the coordinating unit, and the driver did not notice engine failures, then simply erase the fault code from the memory.
Clear the DTC from the engine control unit. Ensure that this error code is no longer generated during operation.

EMS 65526

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator was not completed within the prescribed period of time.

The reasons:

Check took too long.

Notes:

Elimination:

Explain to the driver that the engine must be turned off before disconnecting the battery.

EMS 65527

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Incorrect last shutdown of engine control unit.

The reasons:

The battery (voltage U30) was turned off until the voltage from the ignition switch (voltage U15) stopped. (This may be the case when the battery is disconnected prematurely.)

Notes:

Elimination:

Explain to the driver that the engine must be turned off before disconnecting the battery.

EMS 65532

Blocks:

2098557, 2098556, 2110163, 2110160, 2110164, 2110165, 2110166, 2110162, 2110116

Title:

Mutual verification between the engine control unit and the coordinator

Fault:

Mutual verification between the engine control unit and the coordinator failed.

The reasons:

The engine control unit is not associated with the coordinator.

Notes:

As long as the DTC is present, the engine cannot be started. The starter is blocked and the fuel supply is turned off.

Elimination:

It is only necessary to delete the fault code if no fault codes were generated in the coordinator and the driver did not notice any faults. If any trouble codes are recorded in the coordinator's memory, start troubleshooting. After completing the troubleshooting, erase the trouble code from the engine control unit. Ensure that this error

code is no longer generated during operation.