P3807

Fault code description

NOx sensor after catalyst power supply - Out of range

Possible cause

1. Short circuit to earth in the wiring harness.
2. Open circuit in power supply wiring harness.
3. Supply voltage too high.
4. Internal malfunction of the NOx after catalyst sensor.

Additional information

The NOx sensor is permanently attached to the NOx control module. The NOx sensor assembly is serviced as a single component and individual components cannot be replaced.

This fault may result in engine torque reduction or vehicle speed limiting.

Set condition of fault code

The set condition depends on the "release sequence number"

Release sequence number <9:

This diagnostic runs when the key switch is in the ON position, the engine is running and the exhaust gas temperature after the SCR catalyst is above 302ºF (150ºC) for five seconds.

The EAS-3 unit detects that the power supply to the NOx after catalyst sensor is above or below a threshold.

Release sequence number ≥9:

This diagnostic runs when the key switch is in the ON position, the engine is running and the exhaust gas temperature after the SCR catalyst is above 392ºF (200ºC) for 60 seconds.

The EAS-3 unit detects that the power supply to the NOx after catalyst sensor is above or below a threshold.

Reset condition of fault code

The reset condition depends on the "release sequence number"

Release sequence number <9:

To validate the repair, start and run the engine to raise the exhaust temperature. This may be done by either driving the vehicle or initiating a stationary regeneration using DAVIE.

The exhaust gas temperature after the SCR catalyst must be above 302°F (150°C) before the sensor can run its internal diagnostic.

This fault code will change to inactive immediately after the diagnostic runs and passes.

Release sequence number ≥9:

To validate the repair, start and run the engine to raise the exhaust temperature. This may be done by either driving the vehicle or initiating a stationary regeneration using DAVIE.

The exhaust gas temperature after the SCR catalyst must be above 392°F (200°C) before the sensor can run its internal diagnostic.

This fault code will change to inactive immediately after the diagnostic runs and passes.

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P3807, Diagnostic information

Technical data

"Sensor, NOx after catalyst (F843)"

Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

"Sensor, NOx after catalyst (F843)"

Block diagram

"Block diagram EAS-3"

Step by step troubleshooting

Please perform the troubleshooting steps below using the breakout harness if necessary to check electrical components such as sensors, electrical control units or harnesses. Back probing is not recommended as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a

change in errors.

- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step by step 1: Check fault codes

Step 1A: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check fault codes.

Is fault code P3807 active?

- Yes – Proceed to step 2A
- No – Proceed to step 4A

Step by step 2: Check the NOx sensor after catalyst and the circuit

Step 2A: Inspect the NOx after catalyst sensor and connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the NOx after catalyst sensor from the harness.
3. Inspect the NOx after catalyst sensor harness and connector for:
    1. Corroded or dirty pins
    2. Damaged pins
    3. Pushed back or expanded pins
    4. Loose connector
    5. Moisture in or on the connector
    6. Connector shell damaged
    7. Missing or damaged connector seals
    8. Wire insulation damage

Dirty or damaged pins/connector?

- Yes – A dirty or damaged connection has been detected. Clean, repair or replace the damaged connection or harness if possible - Proceed to step 4A
- No – Proceed to step 2B

Step 2B: Check the voltage to the NOx after catalyst sensor

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the NOx after catalyst sensor from the harness.
3. Turn the key switch ON.
4. Check the power supply and return circuit to the NOx after catalyst sensor.
5. Measure the voltage between the NOx after catalyst sensor supply circuit and return circuit at the NOx sensor harness connector.

Check the voltage at key ON, while cranking the engine and with the engine running at idle.

Is the voltage within 1 VDC of the battery voltage?

- Yes – Proceed to step 2C
- No – Proceed to step 3A

Step 2C: Check the condition of the NOx after catalyst sensor

Troubleshooting steps

1. Turn the key switch OFF.
2. Connect the NOx after catalyst sensor to the harness.
3. Turn the key switch ON.
4. Start and idle the engine.
5. Operate the engine until the NOx after catalyst sensor is above 302°F (150°C) or 392ºF (200ºC). This is depending on

the software version.

6. Check the appropriate circuit response.

Is fault code P3807 active?

- Yes – Replace the NOx after catalyst sensor - Proceed to step 4A
- No – The removal and re-installation of the connector corrected the fault. Proceed to step 4A

Step by step 3: Check the battery and the harness

Step 3A: Check the battery connections

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the positive and negative battery terminals.

Are the connections tight and corrosion-free?

- Yes – Proceed to step 3B
- No – Tighten and/or clean the connections. Refer to the OEM manual. Proceed to step 4A

Step 3B: Check for an open circuit in the battery voltage supply

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the NOx after catalyst sensor from the harness.
3. Turn the key switch ON.
4. Check for an open circuit.
5. Measure the voltage between the NOx after catalyst sensor battery supply pin and the engine block ground.

Is the voltage within 1 VDC of the battery voltage?

- Yes – An open circuit has been detected in the NOx after catalyst sensor ground circuit. Repair or replace the wiring.

Proceed to step 4A

- No – An open circuit has been detected in the NOx after catalyst sensor supply circuit. Check for an open circuit, short circuit or blown fuses in the power supply circuit. Repair or replace the wiring/fuse. Proceed to step 4A

Step by step 4: Clear the fault code

Step A: Disable the fault code

Troubleshooting steps

1. Connect all components.
2. Operate the system within the 'reset condition of the fault code' found in the fault code information.
3. Use DAVIE to verify if the fault codes are inactive.

Is fault code P3807 inactive?

- Yes – Proceed to step 4B
- No – Return to the troubleshooting steps - Proceed to step 1A

  If all the steps have been completed and checked again, contact the Engine Support Center for further instructions.

Step 4B: Clear the inactive fault codes

Troubleshooting steps

1. Connect all components
2. Turn the key switch ON.
3. Use DAVIE to clear the inactive fault codes.

Have all the fault codes been cleared?

- Yes – Repair complete
- No – Troubleshoot any remaining active fault codes

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