P3800

Fault code description

Exhaust gas temperature after SCR catalyst - Voltage too high on ECU (D375) pin (B31)

Possible cause

1. Open return circuit in the harness, connectors or sensor.
2. Open signal circuit or shorted to a voltage source.
3. Malfunctioning SCR temperature sensor interface.

Additional information

The EAS-3 ECU will use a default temperature value of 486ºF (252ºC) for the exhaust temperature after SCR catalyst.

DEF injection into the SCR system is disabled.

The exhaust temperature after SCR catalyst sensor shares the return wire in the OEM harness with other sensors. An open-circuit return wire can cause multiple sensor fault codes to be active.

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

Engine management system fault code U113F is set in combination with this fault code. Always start the diagnostic session with P3800.

Set condition of fault code

This diagnostic runs continuously when the key switch is ON.

The EAS-3 ECU detects that the exhaust temperature after SCR catalyst sensor signal voltage is above a calibratable value.

Reset condition of fault code

This fault code will change to inactive when the exhaust temperature after SCR catalyst sensor signal voltage has returned to normal operating condition.

To validate the repair, start the engine and let it idle for one minute.

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P3800, Diagnostic information

Technical data

"Sensor, exhaust temperature after SCR catalyst (F842)"

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, exhaust temperature after SCR catalyst (F842)"

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 for fault codes.

Is fault code P3800 inactive?

- Yes – Proceed to step 5A
- No – Proceed to step 2A

Step by step 2: Check the exhaust temperature after SCR catalyst sensor and the circuit

Step 2A: Inspect the exhaust temperature after SCR catalyst sensor and connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the exhaust temperature after SCR catalyst sensor from the DOC/DPF temperature sensor interface module.
3. Inspect the catalyst temperature sensor interface module and exhaust temperature after SCR catalyst sensor 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 5A
- No – Proceed to step 2B

Step 2B: Check the circuit response

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the exhaust temperature after SCR catalyst sensor from the catalyst temperature sensor interface module.
3. Place a jumper wire between the sensor signal pin and the earth pin at the sensor connector of the catalyst temperature sensor interface module.
4. Turn the key switch ON.
5. Check for the appropriate circuit response after 30 seconds.
6. Use DAVIE to read the fault codes.

Is fault code P3801 active and P3800 inactive?

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

Step 2C: Check the fault codes and verify the sensor condition

Troubleshooting steps

1. Turn the key switch OFF.
2. Connect the exhaust temperature after

SCR catalyst sensor to the catalyst temperature sensor interface module.

3. Turn the key switch ON.
4. Check for the appropriate circuit response after 30 seconds.
5. Use DAVIE to read the fault codes.

Is fault code P3800 active?

- Yes – A damaged sensor has been detected. Replace the sensor. Proceed to step 5A
- No – The removal and re-installation of the connector corrected the fault. Proceed to step 5A

Step by step 3: Check the catalyst temperature sensor interface module

Step 3A: Inspect the catalyst temperature sensor interface module

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect all temperature sensors and the harness from the catalyst temperature sensor interface module.
3. Inspect the catalyst temperature sensor interface module 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 catalyst temperature sensor

interface module - Proceed to step 5A

- No – Proceed to step 3B

Step 3B: Check for an open circuit in the catalyst temperature sensor interface module

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect all temperature sensors and the harness from the catalyst temperature sensor interface module.
3. Check for an open circuit.
4. Measure the resistance of each circuit contained within the catalyst temperature sensor interface module.

Is the resistance less than 10 ohms?

- Yes – Proceed to step 3C
- No – An open circuit has been detected in the catalyst temperature sensor interface module. Replace the catalyst temperature sensor interface module - Proceed to step 5A

Step 3C: Check for a pin-to-pin short circuit in the catalyst temperature sensor interface module

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect all temperature sensors and the harness from the catalyst temperature sensor interface module.
3. Check for a pin-to-pin short circuit.
4. Measure the resistance between each pin in each connector in the catalyst temperature sensor interface module to all other pins in the catalyst temperature sensor interface module.

Is the resistance greater than 100k ohms?

- Yes – Proceed to step 4A
- No – A pin-to-pin short circuit has been

detected in the catalyst temperature sensor interface module. Replace the catalyst temperature sensor interface module - Proceed to step 5A

Step by step 4: Check the EAS-3 unit and the harness

Step 4A: Inspect the EAS-3 unit and the harness connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 unit from the harness.
3. Inspect the harness and EAS-3 unit 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 5A
- No – Proceed to step 4B

Step 4B: Check for an open circuit in the harness

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 unit from the harness.
3. Disconnect the exhaust temperature after SCR catalyst sensor from the

harness.

4. Check for an open circuit.
5. Measure the resistance of the exhaust temperature after SCR catalyst sensor earth wire between the EAS-3 unit connector pin and the sensor connector pin.

Is the resistance less than 10 ohms?

- Yes – Proceed to step 4B1
- No – An open circuit has been detected in the harness. Repair or replace the harness - Proceed to step 5A

Step 4B1: Check for an open circuit in the harness

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 unit from the harness.
3. Disconnect the exhaust temperature after SCR catalyst sensor from the harness.
4. Check for an open circuit.
5. Measure the resistance of the exhaust temperature after SCR catalyst sensor signal wire between the EAS-3 unit connector pin and the sensor connector pin.

Is the resistance less than 10 ohms?

- Yes – Proceed to step 4C
- No – An open circuit has been detected in the harness. Repair or replace the harness - Proceed to step 5A

Step 4C: Check for a pin-to-pin short circuit in the harness

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 unit from the

harness.

3. Disconnect the exhaust temperature after SCR catalyst sensor from the harness.
4. Check for a pin-to-pin short circuit.
5. Measure the resistance between the EAS-3 unit connector exhaust temperature after SCR catalyst sensor signal pin and all other pins in the harness.

Is the resistance greater than 100k ohms?

- Yes – Proceed to step 4D
- No – A pin-to-pin short circuit has been detected in the harness. Repair or replace the harness - Proceed to step 5A

Step 4D: Check for an inactive fault code

Troubleshooting steps

1. Connect all components.
2. Turn the key switch ON.
3. Check for the appropriate circuit response after 30 seconds.
4. Use DAVIE to read the fault codes.

Is fault code P3800 inactive?

- Yes – The removal and re-installation of the connector corrected the fault - Proceed to step 5A
- 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 instruction on replacement of the EAS-3 unit.

Step by step 5: Clear the fault code

Step 5A: 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 P3800 inactive?

- Yes – Proceed to step 5B
- 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 5B: 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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