

## P3967

### Fault code description

Exhaust gas temperature before SCR catalyst - Data erratic, intermittent or incorrect

### Possible cause

1. Exhaust temperature before SCR catalyst sensor stuck in-range.
2. High resistance in the exhaust temperature before SCR catalyst sensor signal or return wires.
3. Malfunctioning SCR temperature sensor interface.
4. DEF contamination.

### Additional information

The EAS-3 ECU will use a default temperature value of 486°F (252°C) for the exhaust temperature before SCR catalyst.

DEF injection into the SCR system is disabled.

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

### Set condition of fault code

This diagnostic runs when the below conditions are met:

1. the engine has been running for 900 seconds;
2. the exhaust temperatures before and after the SCR catalyst are between 217°F (103°C) and 1112°F (600°C);
3. the exhaust gas mass flow is 5.47 oz/sec (155 gram/sec); and
4. a DPF regeneration has not occurred for 900 seconds, to allow the exhaust temperatures to return to normal levels.

The EAS-3 ECU detects that the difference between the exhaust temperatures before and after the SCR catalyst is outside a calibratable

threshold, and that the difference between the exhaust temperature after DPF sensor and the exhaust temperature before SCR catalyst is outside a calibratable threshold.

#### Reset condition of fault code

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

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## P3967, Diagnostic information

### Technical data

["Sensor, exhaust temperature before SCR catalyst \(F841\)"](#)

### 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 before SCR catalyst \(F841\)"](#)

### 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 P3796 or P3797 active?

- **Yes** – Proceed with fault code P3796 or P3797
- **No** – Proceed to step 2A

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

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

#### Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the exhaust temperature before SCR catalyst sensor from the catalyst temperature sensor interface module.
3. Inspect the catalyst temperature sensor interface module and exhaust temperature before 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 damage
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 before SCR catalyst sensor from 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 P3796 active?

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

#### Step 2C: Check the circuit response

##### Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the exhaust temperature before 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 P3797 active?

- **Yes** – A damaged sensor has been detected. Replace the sensor. Proceed to step 5A
- **No** – Proceed to step 3A

### 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 damage
  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 damage
  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 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 before 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 before SCR catalyst sensor signal pin and all other pins in the harness.

#### Is the resistance greater than 100k ohms?

- **Yes** – Proceed to step 4C
- **No** – A pin-to-pin short 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 before 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 before SCR catalyst sensor earth 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 a pin to earth short circuit

##### Troubleshooting steps

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

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

Is the resistance greater than 100k ohms?

- **Yes** – Proceed to step 5A
- **No** – A pin to earth short circuit on the signal wire has been detected in the harness. Repair or replace the harness - Proceed to step 5A

## Step by step 5: Check the DEF quality

### Step 5A: Inspect the DEF quality

#### Troubleshooting steps

1. Turn the key switch OFF.
2. Check the DEF quality:
  - Visually inspect the DEF in the tank for signs of debris or contamination.
  - Use a DEF refractometer to measure the urea concentration.
  - Use the oil test paper to test for diesel fuel or oil contamination in the DEF tank.

Is the DEF free of contamination and within the specifications?

- **Yes** – Proceed to step 6A
- **No** – The fluid in the tank is not pure DEF. Drain the tank, clean the system and fill the tank with DEF. Proceed to step 6A

## Step by step 6: Clear the fault code

### Step 6A: 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 P3798 inactive?

- **Yes** – Proceed to step 6B
- **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 6B: 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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