

P3977

Fault code description

SCR catalyst - Efficiency degradation

Additional information

This fault code is **only** used to assist in troubleshooting fault codes P3816, P3817 and/or P3829.

By comparing the NOx concentration before and after the SCR catalyst using the NOx sensor, the EAS-3 ECU is able to determine the conversion efficiency of the SCR catalyst and DEF dosing system.

Set condition of fault code

This diagnostic only runs during 'DPF Regeneration' test with DAVIE.

The EAS-3 ECU detects that the NOx conversion across the SCR catalyst is lower than expected, indicating a malfunctioning SCR catalyst.

Reset condition of fault code

This fault code will change to inactive after a 'DPF Regeneration' test with DAVIE and if the NOx conversion across the SCR catalyst is considered to be correct.

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P3977, Diagnostic information

Technical data

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Location of component(s)

["Location information, EAS-3"](#)

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

["SCR unit"](#)

Block diagram

["Block diagram EAS-3"](#)

Step by step troubleshooting



Please perform the troubleshooting steps below by utilizing 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 P3977 active?

- **Yes** – Proceed to step 1B
- **No** – Proceed to step 2A

Step 1B: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check for fault codes related to the SCR catalyst.

Is fault code P3816, P3817 or P3829 active?

- **Yes** – This fault code is only used to assist in troubleshooting the fault codes P3816, P3817 or P3829. Proceed with the appropriate fault code.
- **No** – Proceed to step 2A

Step by step 2: Clear the fault code

Step 2A: 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 P3977 inactive?

- **Yes** – Proceed to step 2B
- **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 2B: 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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