P3852

Fault code description

DEF temperature/level sensor - Short circuit to ground

Possible cause

1. Signal circuit shorted to ground or open circuit.

Additional information

Before troubleshooting this fault code, check for multiple fault codes.

DEF injection into the SCR system may be disabled when the actual level is low.

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

Set condition of fault code

This diagnostic runs continuously when the key switch is ON.

The EAS-3 ECU detects that the DEF level sensor signal voltage dropped below a set value.

Reset condition of fault code

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

To validate the repair, start the engine and let it idle for three minutes.

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P3852, Diagnostic information

Technical data

"Sensor, DEF temperature/level (F851)"

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, DEF temperature/level (F851)"

Block diagram

"Block diagram EAS-3"

Step by step troubleshooting

Please perform the troubleshooting steps below by utilising 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 P3852 inactive?

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

Step by step 2: Check the DEF tank level sensor and the circuit

Step 2A: Inspect the DEF tank level sensor and connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the DEF tank level sensor from the harness.
3. Inspect the DEF tank level 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 4A
- No – Proceed to step 2B

Step 2B: Check the sensor supply voltage and earth circuit

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the DEF tank level sensor from the harness.
3. Turn the key switch ON.
4. Measure the voltage between the DEF tank level sensor supply pin and the DEF tank level sensor earth pin at the connector.

Is the voltage 4.75 to 5.25 VDC?

- 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 DEF tank level sensor from the harness.
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 P3851 active?

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

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

Troubleshooting steps

1. Turn the key switch OFF.
2. Connect the DEF tank level sensor to the harness.
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 P3852 active?

- Yes – A damaged sensor has been detected. Replace the 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 EAS-3 actuator and the harness

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

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 actuator from the harness.
3. Inspect the harness and EAS-3 actuator 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 3B

Step 3B: Check for a pin-to-pin short circuit in the harness

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 actuator from the harness.
3. Disconnect the DEF tank level sensor from the harness.
4. Check for a pin-to-pin short circuit.
5. Measure the resistance between the EAS-3 actuator connector DEF tank level sensor signal pin and all other pins in the harness.

Is the resistance greater than 100k ohms?

- Yes – Proceed to step 3C
- No – A pin-to-pin short circuit has been detected in the harness. Repair or replace the harness - Proceed to step 4A

Step 3C: Check for a pin to earth short circuit

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 actuator from the harness.
3. Disconnect the DEF tank level sensor from the harness.
4. Check for a pin to earth short circuit.
5. Measure the resistance between the EAS-3 actuator connector DEF tank level sensor signal pin and earth.

Is the resistance greater than 100k ohms?

- Yes – Proceed to step 3D
- 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 4A

Step 3D: 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 P3852 inactive?

- Yes – The removal and installation of the connector corrected the fault - Proceed to step 4A
- 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 on replacement of the EAS-3 actuator

Step by step 4: Clear the fault code

Step 4A: 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 P3852 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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