P3831

Fault code description

Fuel shut-off valve - Short circuit to supply on ECU (D374) pin (B7)

Possible cause

1. Fuel shut-off valve signal wire shorted to a voltage source in the harness.
2. A damaged fuel shut-off valve.

Additional information

An engine torque derate will be activated.

The fuel shut-off valve is located in the fuel intake module.

Set condition of fault code

This diagnostic runs within the first 30 seconds prior to active regeneration of the DPF.

The fuel shut-off valve circuit pulse width modulated (PWM) signal is detected by the EAS-3 ECU to be at system voltage when the PWM voltage is turned on.

Reset condition of fault code

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

The fault must be cleared with DAVIE prior to validating the repair. Repair can be validated by performing the 'DPF regeneration' test or the 'fuel dosing system override test' with DAVIE.

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P3831, Diagnostic information

Technical data

"Intake module, fuel (L072)"

Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

"Intake module, fuel (L072)"

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 P3831 inactive?

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

Step by step 2: Check the fuel shut-off valve and the circuit

Step 2A: Inspect the fuel shut-off valve and connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the fuel shut-off valve from the harness.
3. Inspect the fuel shut-off valve 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 for a short circuit in the fuel shut-off valve

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the fuel shut-off valve from the harness.
3. Check the fuel shut-off valve resistance.
4. Measure the resistance between the fuel shut-off valve supply and earth pin.

Is the resistance 4 to 6 ohms?

- Yes – Proceed to step 3A
- No – Replace the fuel shut-off valve. Proceed to step 4A

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

Step 3A: 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 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 unit from the harness.
3. Disconnect the fuel shut-off valve from the harness.
4. Check for a pin-to-pin short circuit.
5. Measure the resistance between the fuel shut-off valve supply pin and all other pins in the harness.

Is the resistance greater than 100k ohms?

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

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 P3842 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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