P3964

Fault code description

EAS-3 ECU - Incorrect power down

Possible cause

1. Resistance in power supply circuit or ground circuit of the EAS-3 ECU.
2. Open power supply circuit after contact to the EAS-3 ECU.
3. Open power supply circuit before contact to the EAS-3 ECU.
4. Incorrect power down of EAS-3 ECU.

Additional information

The power supply before contact was switched off before the power supply after contact. Make sure that power supply before contact is coming directly from the battery.

Use of battery disconnect switches to turn off the engine or any device that disconnects battery voltage to the ECU within 10 seconds of turning the key switch OFF can cause damage to the EAS-3 system.

Power-down data, such as trip information, maintenance monitor, and fault information is not saved to permanent memory. The vehicle should not be operated with this fault active.

Set condition of fault code

The EAS-3 ECU detects that EAS-3 unit power supply dropped below 6.2 VDC while the key switch was ON.

The EAS-3 ECU was not allowed to power down correctly (retain battery voltage for 60 seconds after key OFF).

The fault code will be active when the key switch is turned ON following the incomplete power-down event.

Reset condition of fault code

This diagnostic runs continuously when the key switch is ON.

To validate the repair, start the engine, let it idle for 1 minute, and shut it down properly.

The ECM must see adequate battery voltage when the key switch is turned OFF before the fault code will go inactive.

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P3964, Diagnostic information

Technical data

"Power supply and earth of EAS-3 unit (D374)"

"CAN connection, EAS-3 unit (D374)"

Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

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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 P3964 active?

- Yes – Proceed to step 2A
- No – If a high inactive count of P3964 is found, check the disconnect devices in the vehicle. Proceed to step 4A

Step by step 2: Check the batteries

Step 2A: Check the battery terminals

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the terminal connections.

Connections tight and corrosion free?

- Yes – Proceed to step 2B
- No – Tighten and/or clean the terminals. Refer to the OEM manual. Proceed to step 4A

Step 2B: Check the battery voltage

Troubleshooting steps

1. Turn the key switch ON.

2. Check the battery voltage.

Voltage at least 12 VDC?

- Yes – Proceed to step 3A
- No – Charge or replace the batteries. Refer to the OEM service manual. Proceed to step 3A

Step by step 4: Check the OEM power supply

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

Troubleshooting steps

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

- 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 an open circuit in battery supply circuit

Troubleshooting steps

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

harness.

3. Check for an open circuit in the battery power supply.
4. Measure the power supply voltage on the EAS-3 unit connector and ground.

Power supply at least 10 VDC?

- Yes – Proceed to step 3C
- No – Proceed to step 3B1

Step 3B1: Check for an incorrect installed OEM fuse

Troubleshooting steps

1. Turn the key switch OFF.
2. Inspect the OEM fuse for correct installation.

Fuse installed correctly?

- Yes – Proceed to step 3B2
- No – Install the fuse correctly - Proceed to step 4A

Step 3B2: Check for a blown OEM fuse

Troubleshooting steps

1. Turn the key switch OFF.
2. Inspect if the OEM fuse is blown

Is the OEM fuse blown?

- Yes – Locate the short circuit and repair or replace the OEM harness. Replace the fuse. Proceed to step 4A
- No – Proceed to step 3B3

Step 3B3: Check add-on or accessory wiring at the battery supply terminal

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the add-on or accessory wiring at the (+) terminal of the battery.
   - Start at the (+) terminal and follow any add-on or accessory wiring. Check

wiring for damage or installation errors that can cause short circuit.

Any damaged wires?

- Yes – Repair or replace the damaged wiring. Proceed to step 4A
- No – Proceed to step 3C

Step 3C: Check the resistance of the battery supply circuit

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 connector.
3. Disconnect the (+) terminal from the battery.
4. Check the resistance of the battery supply circuit.
5. Measure the resistance between the power supply pin of the EAS-3 connector and the (+) battery connector.
6. Measure the resistance between the ground pin of the EAS-3 connector and the (-) battery connector.

Normally the resistance of the battery supply circuit is very low. Therefore use an accurate digital multimeter.

Resistance less than 1 ohm?

- Yes – Proceed to step 3D
- No – High resistance in the harness. Repair or replace the OEM harness. Proceed to step 4A

Step 3D: Check the power supply after key switch

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the key switch wire from the EAS-3 connector to the key switch for interruptions.

Key switch wire interrupted?

- Yes – Correct the wiring. Proceed to step 4A
- No – Proceed to step 3E

Step 3E: Check the key switch circuit

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 connector.
3. Measure the resistance between the key switch supply pin of the EAS-3 connector and the key switch.

Resistance less than 5 ohms?

- Yes – Proceed to step 4A
- No – Repair or replace the wiring. 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 P3964 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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