U1011

Fault code description

CAN communication - Hardware or software malfunction on E-CAN

Possible cause

- Breakdown in communication in the CAN network
- Open circuit, short circuit to earth or short circuit to supply in the CAN network wiring
- Malfunction to the VTG, humidity sensor or BPV

Additional information

-

Set condition of fault code

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Reset condition of fault code

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U1011, Diagnostic information

Technical data

"CAN connections of PMCI-2 electronic unit (D365)"

Location of component(s)

"Location information, PMCI-2"

Electrical diagram(s)

"PMCI-2"

Description of component(s)

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Block diagram

"PMCI-2"

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.

- This troubleshooting tree is based on the assumption that supply power and earth to the PMCI are functioning properly.
- Disconnecting the PMCI 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 in Rapido.

- Exit the 'active errors' screen 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 codes. Refer to the 'possible causes' section in Rapido.

Step 1A: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check whether U1011 is present as an active or inactive fault code.

Is fault code U1011 present as an active or inactive fault code?

- Yes – Proceed to step 2.
- No – Proceed to any other fault codes present.

Step 2: Check the electrical system

Step 2A: Pin out and check for damage

Troubleshooting steps

1. Visual inspection of engine harness for any potential damage.
2. Verify that the ECM software is up-to-date (if it is not, update the software).
3. Check for 120 ohms (+/- 12 ohms) resistance between pins 3 and 4 harness side with the turbo actuator unplugged.
   - If resistance is out of range, then verify PMCI terminating resistance is 120 ohms +/- 12 ohms. Also verify there is no damage to the engine harness.

- Reference section 4.2 for internal actuator checks.

4. Check for 60 ohms (+/- 6 ohms) between pins 3 and 4 harness side with humidity sensor unplugged.
   - If resistance is out of range, then verify turbo actuator terminating resistance in the turbo actuator is at 120 ohms +/- 12 ohms.
5. Check the pin and terminal integrity on system components (controller, sensors, and harness).
6. Check for corroded/damaged pins and spread terminals.
7. Check for damaged connector shell, loose connector, missing seal, and moisture in connector.

Does the electrical system pass all of these tests?

- Yes – Proceed to step 2B.
- No – Resolve the electrical issues. Proceed to step 2B.

Step 2B: Pin out 12 V and check for damage

Troubleshooting steps

1. Check for 12 V power between pins 1 and 2 (pin 1=power, pin 2=ground) on E-CAN network (engine harness) at both the humidity sensor and turbo actuator.

Is the power between pins 1 and 2 12 V?

- Yes – Re-check power and ground wiring and pins. Make sure they are not damaged. If they are damaged, replace as needed. If not, proceed to step 2C.
- No – Inspect the 12 V battery voltage and power and ground wiring; if needed, replace the battery. Proceed to the validation step.

Step 2C: Perform wiggle test

Troubleshooting steps

1. Wiggle test the engine harness and all connectors.

Does the wiggle test result in fault codes or intermittent connection to any controllers?

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

Step 2D: Check connectors at controllers

Troubleshooting steps

1. Inspect connectors at controllers (check for loose/damaged pins/terminals/seals in connector). As well as any broken/damaged wiring to controllers.

Was an issue found?

- Yes – Resolve issue found. Proceed to step 5.
- No – Proceed to step 3.

Step 3: Check the turbo

Troubleshooting steps

1. With the turbo actuator unplugged, check the internal resistance. Verify that pins 3 and 4 have a resistance of 120 ohms (+/- 12 ohms).
2. Verify that pin 1 (power) or pin 2 (ground) to pin 3 (CAN-H) or pin 4 (CAN-L) have resistance greater than 5K ohms.

Are the turbo resistances in range?

- Yes – Proceed to step 4.
- No – Contact the Engine Support Center for further assistance.

Step by step 4: Verify all campaigns performed

Troubleshooting steps

1. Verify that all campaigns have been performed on the truck.

Have all campaigns been performed?

- Yes – Proceed to step 5.
- No – Perform campaigns. Proceed to step 5.

Step 5: Check to see if the fault has been resolved

Troubleshooting steps

1. Warm the truck to operating temperature.
2. Check DAVIE to see if the fault code has been resolved.

Has the fault code been resolved?

- Yes – Release the truck.
- No – Contact the Engine Support Center for further assistance.

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