U1408

Fault code description

VTG turbo charger actuator - CAN communication error

Possible cause

- Check the turbo for correct functioning

Additional information

-

Set condition of fault code

-

Reset condition of fault code

-

M027718 - 07/22/2015 15:07:17

U1408, Diagnostic information

Technical data

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

"Actuator, rotary speed (L037)"

Location of component(s)

"Location information, PMCI-2"

Electrical diagram(s)

"PMCI-2"

Description of component(s)

"Actuator, rotary speed (L037)"

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, electronic 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.

- It is necessary to 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 by step 1: Check for fault codes

Troubleshooting steps

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

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

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

Step by 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 PMCI 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.

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 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 the turbo actuator.

Is the power between pins 1 and 2 12 V?

- Yes – Recheck 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 necessary, 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 the electronic control units

Troubleshooting steps

1. Inspect the connectors at the electronic control units (check for loose/damaged pins/terminals/seals in connector), and check for any broken/damaged wiring to the electronic control units.

Was an issue found?

- Yes – Resolve issue found. Proceed to step 6.
- No – Proceed to step 3

Step by step 3: Check the humidity sensor

Troubleshooting steps

1. Visually inspect the sensor for damage to pins and the sensor tip.
2. Verify that the sensor is reading data accurately.

Was an issue found?

- Yes – Resolve issue found. Proceed to step 6.
- No – Proceed to step 4

Step by step 4: 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 5.
- No – Contact the Engine Support Center for further assistance.

Step by step 5: Verify all campaigns have been performed

Troubleshooting steps

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

Have all campaigns been performed?

- Yes – Proceed to step 6.
- No – Perform campaigns. Proceed to step 6.

Step by step 6: Check to see if the fault has been resolved

Troubleshooting steps

1. Warm the truck to operating temperature.
2. Use DAVIE to see whether 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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