P1709

Fault code description

Lambda - Data valid but too low, during overrun

Possible cause

1. Faulty lambda sensor
2. In-cylinder combustion in a non-fuelling event.

Additional information

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Set condition of fault code

This diagnostic starts when the coolant temperature is above 122°F (50°C) and it runs continuously.

Reset condition of fault code

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

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P1709, Diagnostic information

Technical data

"Sensor, lambda (F834)"

"Sensor, pressure after BPV (F823)"

Location of component(s)

"Location information, PMCI-2"

Electrical diagram(s)

"PMCI-2"

Description of component(s)

"Lambda sensor (F834)"

"Pressure after BPV sensor (F823)"

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.

- 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 related fault codes

Step 1A: Investigate fuel or combustion-related fault codes

Troubleshooting steps

1. Use DAVIE to check for related active fault codes.

Are these or any other fuel/combustion related faults active (P0201, P0205, P0261, P0262, P0263, P0266, P0269, P0272, P0273, P0274, P0275, P0278, P0301, P0302, P0303, P0304, P0305 or P0306)?

- Yes – Possible in-cylinder injector leak. Proceed with troubleshooting these faults before continuing with this procedure.
- No – Proceed to step 2A.

Step by step 2: Visual Inspections

Step 2A: Check the Lambda sensor (F834) and the connections

Troubleshooting steps

1. Visually inspect the associated component connections and wiring for any of the following:
   - Damaged or loose connectors
   - Bent, broken, corroded or loose connector pins

- Moisture or dirt in the connections
- Damage to the wire harness or insulation
- The correct parts are not installed
- ECU connections are damaged or disconnected
- Batteries are not OK; the contacts are not tight
- Lambda sensor broken or not installed correctly

Was there evidence of any of the above?

- Yes – Clean and repair any issues found.

  Replace the lambda sensor (F834) if it is damaged or broken. Proceed to step 4 to perform the corresponding verification drive cycle. Use DAVIE to check for active faults. If this fault is still active, proceed to Step 3B.
- No – Proceed to step 3.

Step by step 3: Electrical checks lambda sensor (F834)

Step 3A: Check the heater element resistance across the sensor

Troubleshooting steps

1. Check the heater element resistance across the sensor.

Is the measured resistance value within the expected range according to Engine Rapido?

- Yes – Proceed to Step 3B.
- No – Repair any issues found, or replace the sensor if measured values indicate a sensor error. Proceed to Step 4 to perform the corresponding verification drive cycle. Use DAVIE to check for active faults. If this fault is still active, proceed to Step 5A.

Step 3B: Check the sensor heater element supply voltage

Troubleshooting steps

1. Check the sensor heater element supply voltage.

Is the measured value within the expected range according to Engine Rapido?

- Yes – Proceed to Step 5A.
- No – Proceed to Step 3C.

Step 3C: Check the wiring harness continuity

Troubleshooting steps

1. Check the wiring harness continuity between the Lambda sensor (F834) and the PMCI-2 ECU (D420) connector.

Does the measured resistance (continuity) of the harness fall within an expected range (no indications of an open or short circuit)?

- Yes – Proceed to Step 5A.
- No – Repair any issues found. Proceed to Step 4 to perform the corresponding verification drive cycle. Use DAVIE to check for active faults. If this fault is still active, proceed to Step 5A.

Step by step 4: Verification cycles

Step 4A: Verification drive cycle: steady state

Troubleshooting steps

1. This cycle is best performed on a level grade road (least amount of incline possible) and under load using a trailer. If a loaded trailer is unavailable, produce engine load by turning the A/C and fan to ON. With the System Initiation cycle complete, proceed to a road with a minimum speed limit of 50 mph, then get to the highest gear possible with the engine speed between 1100 and 1500 rpm, and set the cruise control. Run this cycle for roughly 3 to 5 miles or in three separate 1-mile increments if a steady 3

to 5 miles is unachievable.

Is the fault code inactive?

- Yes – Issue resolved.
- No – Proceed to Step 5A.

Step by step 5: Contact PACCAR Engine Support Center

Step 5A: Assistance.

Contact the PACCAR Engine Support Center
for further assistance.

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