ISB6.7 CM2350 B101

Fault Code: 2554 | SPN: 1209 | FMI: 2

Exhaust Gas Pressure 1 - Data Erratic, Intermittent, or Incorrect

1 Check for primary fault codes

Solution: S00000199

Verification

Conditions

- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Use the recommended Cummins® electronic service tool or equivalent to read the fault codes.

Specification

Before troubleshooting this fault code, troubleshoot any fault code that is active or has more than one inactive count within the last 25 engine operating hours from the following list:

- Exhaust gas pressure: 2373, 2374

Linked Solutions

- None

Repair

- Perform a search on the appropriate fault codes.

Validation

- None

2 Exhaust gas pressure sensor stuck in-range

Solution: S00000733

Verification

Conditions

- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Use the recommended Cummins® electronic service tool or equivalent.
- Compare the exhaust gas pressure sensor reading to the barometric pressure.

Specification

- Proceed to the next solution if the exhaust gas pressure is within the following specification of the barometric pressure: 76 mm Hg [3 in Hg]
- Proceed to the Linked Solution section if the exhaust gas pressure is **not** within the following specification of the barometric pressure: 76 mm Hg [3 in Hg]

Linked Solutions

- Plugged or damaged exhaust gas pressure sensor tube (2.1 [S00001370])
- Exhaust gas pressure sensor stuck in-range (2.2 [S00000734])

Repair

- No additional action is required for this solution.

Validation

- None

2.1 Plugged or damaged exhaust gas pressure sensor tube

Solution: S00001370

Verification

Conditions

- Turn keyswitch OFF.
- Remove the exhaust gas pressure sensor tube.

Action

- Visually inspect the exhaust gas pressure sensor tube for cracks and thread damage. Refer to Procedure 011-027
- Visually inspect the inside of the tube and sensor adapter for debris or soot buildup. Refer to Procedure 011-027

Specification

- If plugging or damage is found, then proceed to the Repair section.

Linked Solutions

- None

Repair

- Clean or replace the exhaust gas pressure sensor tube. Refer to Procedure 011-027

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

2.2 Exhaust gas pressure sensor stuck in-range

Solution: S00000734

Verification

Conditions

- Turn keyswitch OFF.
- Disconnect the exhaust gas pressure sensor from the engine wiring harness.

Action

- Inspect the pins and connectors for damage. Refer to Procedure 019-361
- Reconnect the sensor.
- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.
- Use the recommended Cummins® electronic service tool or equivalent.
- Compare the exhaust gas pressure sensor reading to the barometric pressure.

Specification

- A malfunctioning exhaust gas pressure sensor has been detected if the exhaust gas pressure is **not** within the following specification of the barometric pressure sensor: 76 mm Hg [3 in Hg]

Linked Solutions

- None

Repair

- Replace exhaust gas pressure sensor. Refer to Procedure 019-376

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

3 Exhaust gas pressure sensor voltage check

Solution: S00000776

Verification

Conditions

- Turn keyswitch OFF.
- Disconnect the exhaust gas pressure sensor from the engine wiring harness.

Action

- Inspect the pins and connectors for damage. Refer to Procedure 019-361
- Turn keyswitch ON.
- Measure the voltage between the exhaust gas pressure sensor SUPPLY pin and the exhaust gas pressure sensor RETURN pin at the sensor connector of the engine wiring harness.
- Refer to the circuit diagram or wiring diagram for connector pin identification.

Specification

- Proceed to the next solution if voltage is within the following specification: 4.75 - 5.25 VDC
- Proceed to the Linked Solutions section if voltage is **not** within the following specification: 4.75 - 5.25 VDC

Linked Solutions

Click on the link below:

- Exhaust gas pressure sensor voltage check at the ECM (3.1 [S00000777])

Repair

- No additional action is required for this solution.

Validation

- None

3.1 Exhaust gas pressure sensor voltage check at the ECM

Solution: S00000777

Verification

Conditions

- Turn keyswitch OFF.
- Disconnect the engine wiring harness connector from the ECM.

Action

- Inspect the pins and connectors for damage. Refer to Procedure 019-361
- Turn keyswitch ON.
- Measure the voltage between the exhaust gas pressure sensor SUPPLY pin and the exhaust gas pressure sensor RETURN pin at the ECM.
- Refer to the circuit diagram or wiring diagram for connector pin identification.

Specification

- A malfunctioning ECM has been detected if voltage at the ECM connector is **not** within the following specification: 4.75 - 5.25 VDC
- A malfunctioning engine wiring harness has been detected if voltage at the ECM connector is within the following specification: 4.75 - 5.25 VDC

Linked Solutions

- None

Repair

Repair or replace **only** the components that were found to be out of specification.

- Replace the ECM. Refer to Procedure 019-031
- Repair or replace the engine wiring harness. Refer to Procedure 019-043

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

4 Plugged or damaged exhaust gas pressure sensor tube

Solution: S00000703

Verification

Conditions

- Turn keyswitch OFF.

Action

- Remove the exhaust gas pressure sensor tube. Refer to Procedure 011-027
- Visually inspect the exhaust gas pressure sensor tube for cracks and thread damage. Refer to Procedure 011-027
- Visually inspect the inside of the tube and sensor adapter for debris or soot buildup. Refer to Procedure 011-027

Specification

- If plugging or damage is found, then proceed to the Repair section.

Linked Solutions

- None

Repair

- Clean or replace the exhaust gas pressure sensor tube. Refer to Procedure 011-027

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

5 Variable Geometry Turbocharger Hysteresis Test

Solution: S00000463

Verification

Conditions

- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Perform the Variable Geometry Turbocharger Hysteresis Test. Refer to Procedure 010-152

Specification

- If the engine does **not** pass the Variable Geometry Turbocharger Hysteresis Test, then a malfunctioning variable geometry turbocharger or actuator has been detected. Proceed to the Repair section. Refer to Procedure 019-032

Linked Solutions

- None

Repair

Repair or replace **only** the components that were found to be out of specification.

- Replace the variable geometry turbocharger.
- Replace the variable geometry turbocharger actuator.

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

6 Exhaust gas pressure sensor open circuit check

Solution: S00000778

Verification

Conditions

- Turn keyswitch OFF.
- Disconnect the exhaust gas pressure sensor from the engine wiring harness.
- Disconnect the engine wiring harness connector from the ECM.

Action

- Inspect the pins and connectors for damage. Refer to Procedure 019-361
- Measure the resistance between the exhaust gas pressure sensor SIGNAL pin at the exhaust gas pressure sensor engine wiring harness connector and the exhaust gas pressure sensor SIGNAL pin at the engine wiring harness ECM connector.
- Measure the resistance between the exhaust gas pressure sensor SUPPLY pin at the exhaust gas pressure sensor engine wiring harness connector and the exhaust gas pressure sensor SUPPLY pin at the engine wiring harness ECM connector.
- Refer to the circuit diagram or wiring diagram for connector pin identification.

Specification

- A malfunctioning engine wiring harness has been detected if the resistance is greater than the following specification: 10 Ω

Linked Solutions

- None

Repair

- Repair or replace the engine wiring harness. Refer to Procedure 019-043

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

7 Exhaust gas pressure sensor circuit pin to pin short

Solution: S00000775

Verification

Conditions

- Turn keyswitch OFF.
- Disconnect the engine wiring harness connector from the ECM.
- Disconnect the exhaust gas pressure sensor from the engine wiring harness.

Action

- Inspect the pins and connectors for damage. Refer to Procedure 019-361
- Measure the resistance between the exhaust gas pressure sensor SIGNAL pin at the engine wiring harness ECM connector and all other pins in that connector.
- Refer to the circuit diagram or wiring diagram for connector pin identification.

Specification

- A malfunctioning engine wiring harness has been detected if the resistance is less than the following specification: 100k Ω

Linked Solutions

- None

Repair

- Repair or replace the engine wiring harness. Refer to Procedure 019-043

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

8 ECM calibration revision history check

Solution: S00000443

Verification

Conditions

- Connect all components.
- Turn keyswitch ON.
- Connect the recommended Cummins® electronic service tool or equivalent.

Action

- Use the recommended Cummins® electronic service tool or equivalent to read the fault codes.
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revision listed in the ECM calibration revision history for applicable changes.

Specification

- If a calibration update for this fault code is available, the ECM calibration revision **must** be that revision or higher.

Linked Solutions

- None

Repair

- Prior to downloading the ECM calibration, check to see that all job images and all other troubleshooting has been documented as downloading an ECM calibration will remove the fault codes on the ECM.
- Download the updated ECM calibration code. Refer to Procedure 019-032

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

9 Exhaust gas pressure sensor is malfunctioning

Solution: S00003039

Verification

Conditions

- Turn keyswitch OFF.

Action

- Verify all preceding solution verifications for this fault code have been performed.

Specification

- If the fault code is still active after all the preceding solution verifications have been performed, then a malfunctioning exhaust gas pressure sensor has been detected.

Linked Solutions

- None

Repair

- Replace the Exhaust gas pressure sensor. Refer to Procedure 019-376

Validation

- Connect all components
- Connect the recommended Cummins® electronic service tool or equivalent.
- Disable the fault code.
- Operate the engine within the "Conditions for Clearing the Fault Code" found in the Overview section of the troubleshooting procedure.
- Verify that the fault code is no longer active.
- Check ECM Calibration Revision History
- Use the recommended Cummins® electronic service tool or equivalent to find the current ECM code and revision number in the ECM.
- Compare the ECM code and revision number in the ECM to the calibration revisions listed in the ECM Calibration Revision History Database for applicable changes related to this fault code.
- Refer to ECM Calibration Revision History Database.

If all steps have been completed and no root cause has been identified, then follow the technical escalation process.