

GENERIC · CHASSIS

C0551

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0551

Longitudinal Acceleration Sensor Circuit/Open

C0551 indicates that the vehicle's stability control module has detected an open circuit or abnormal voltage in the longitudinal acceleration sensor circuit, which measures forward and backward acceleration for systems like ABS and traction control. The computer sets this code when the sensor's signal wire is open, shorted, or the sensor's internal resistance falls outside the expected range, preventing accurate acceleration data from reaching the control module.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Illumination of the ABS, traction control, and stability control warning lights on the dashboard.
- The stability control system may be disabled, reducing the vehicle's ability to prevent skids or loss of control.
- Often no symptoms besides the warning light, with normal braking and driving behavior.
- In some cases, the transmission may shift harshly or the cruise control may become inoperative if the sensor signal is used by other systems.
- Intermittent warning light activation over bumps or during temperature changes, indicating a loose connection or failing sensor.

Common causes, most likely first

- 1 A faulty longitudinal acceleration sensor, often due to internal failure or contamination.
- 2 Damaged or corroded wiring harness or connector at the sensor, typically from moisture intrusion or physical damage.
- 3 Open circuit in the signal or ground wire between the sensor and the stability control module.
- 4 Poor electrical connection at the stability control module connector, such as loose pins or corrosion.
- 5 A failed stability control module, though this is less common and should be diagnosed last.
- 6 Aftermarket accessories or improper electrical repairs that interfere with the sensor circuit.



How to diagnose and fix it

- 1 Perform a visual inspection of the longitudinal acceleration sensor, its connector, and the wiring harness for obvious damage, corrosion, or loose connections.
- 2 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear the code and test-drive the vehicle to see if it returns immediately or intermittently.
- 3 Measure the resistance and voltage on the sensor circuit according to the manufacturer's specifications, checking for opens, shorts, or out-of-range values.
- 4 Check the sensor's mounting and calibration; some sensors require calibration after replacement or if the vehicle's ride height has changed.
- 5 If the sensor tests faulty, replace it with a quality OEM or equivalent part and perform any required calibration or relearn procedure.
- 6 If the sensor and wiring test good, inspect the stability control module connector and wiring for faults, and substitute a known-good module if necessary.
- 7 After repairs, clear codes and verify that the stability control system operates correctly during a test drive, ensuring no warning lights return.

Hidden causes of C0551 you might overlook

- A weak or failing battery or charging system can cause voltage drops that mimic a sensor circuit fault, so always check battery health and ground connections before condemning the sensor.
- The longitudinal acceleration sensor is sometimes shared with other systems such as hill-start assist or electronic parking brake, so a fault may disable multiple features and set related codes.
- After a collision or suspension repair, the sensor may need recalibration even if the component itself is undamaged, and skipping this step can cause the code to persist.
- Intermittent open circuits often result from wire chafing near moving suspension components or through bulkhead grommets, which may not be visible without wiggling the harness while monitoring live data.
- Some vehicles use the longitudinal acceleration sensor for adaptive cruise control or collision avoidance, so a fault can disable those advanced driver assistance features without obvious driver warnings beyond the stability control light.

Can I keep driving with C0551?

You can generally continue driving with C0551, but the stability control and traction control systems may be disabled, reducing safety in slippery conditions or emergency maneuvers. Avoid aggressive driving, towing, or driving on loose or wet surfaces until the fault is repaired, and have the system diagnosed promptly to restore full vehicle safety features.



Tools that help

- OBD-II scan tool with live data and ABS/stability control capability
- Digital multimeter for measuring resistance and voltage
- Vehicle-specific service information for wiring diagrams and sensor specifications
- Basic hand tools for removing trim and accessing the sensor
- Calibration tool or scan tool capable of performing sensor relearn procedures

Reading C0551

- C** Chassis: brakes, steering and suspension.
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- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
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- 5** Brakes, steering and suspension.
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- 51** The exact fault within that area.

Often seen with

C0050 Right Rear Wheel Speed Sensor Circuit Malfunction · **C0110** ABS Pump Motor Circuit Malfunction · **C0550** Encoder Position Switch Circuit · **C0552** Longitudinal Acceleration Sensor Range/Performance · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

See it working

Watch the animated explainer [Fuel Trims Explained: Short-Term and Long-Term](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0551/>

