

GENERIC · CHASSIS

# C0527

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## C0527

### Steering Angle Sensor Module Mechanical

C0527 indicates that the steering angle sensor module has reported a mechanical fault within its internal sensing element or its physical mounting, so the module cannot reliably report the steering wheel's absolute position to the electronic stability control system. The computer detects this when the sensor's self-test routines find an implausible or missing signal from the mechanical portion of the sensor, often during the initialization check at key-on.

| SYSTEM  | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                            |
|---------|---------------------|----------|----------------|---------------------------------|
| Chassis | Generic (all makes) | Medium   | Intermediate   | Brakes, steering and suspension |

### Symptoms you may notice

- Anti-lock brake system (ABS) warning light and electronic stability control (ESC) warning light illuminated on the dashboard.
- Traction control system disabled, with the traction control off indicator lit.
- Steering feel may remain normal, and often no symptoms besides the warning light are noticed by the driver.
- Electronic stability control may intervene unexpectedly or fail to activate during a skid.
- On some vehicles, the power steering assist may revert to a fixed default mode or feel heavier than usual.
- A stored code C0527 in the ABS/ESC module memory, sometimes accompanied by a steering angle sensor calibration fault.

### Common causes, most likely first

- 1 Failed steering angle sensor module, where the internal mechanical wiper or optical disc has worn or broken.
- 2 Contaminated or damaged sensor element due to debris, moisture, or foreign material entering the sensor housing.
- 3 Loose or improperly installed steering angle sensor, causing misalignment with the steering column.
- 4 Wiring harness damage or poor electrical connection at the sensor module connector, leading to intermittent signal loss.
- 5 Steering column mechanical wear or binding that places abnormal stress on the sensor assembly.
- 6 Aftermarket or incorrect steering column repairs that disturbed the sensor's calibrated position.
- 7 Software or calibration error in the ABS/ESC module that misinterprets a valid sensor signal as a mechanical fault.



## How to diagnose and fix it

- 1 Connect a scan tool and read all ABS/ESC module codes to confirm C0527 is current and check for related steering angle sensor codes.
- 2 Inspect the steering angle sensor connector and wiring for corrosion, loose pins, or chafed insulation, and repair as needed.
- 3 Verify the sensor is securely mounted and that the steering column has no excessive play or binding that could affect sensor alignment.
- 4 Perform a steering angle sensor calibration or relearn procedure using the scan tool, following the manufacturer's specific sequence.
- 5 If calibration fails or the code returns immediately, remove and inspect the sensor for mechanical damage or contamination.
- 6 Replace the steering angle sensor module with a new or remanufactured unit, then perform the required calibration and clear codes.
- 7 Road test the vehicle to confirm the warning lights stay off and the ESC system operates correctly during a safe, controlled maneuver.

## What the steering angle sensor code hides

- A weak or failing battery can cause the steering angle sensor to lose its learned center position, setting C0527 without any mechanical fault in the sensor itself.
- Many technicians replace the steering angle sensor only to find the real problem is a bent or worn steering column intermediate shaft that twists the sensor housing.
- The code can be set by a simple low-speed parking maneuver if the sensor's internal self-check sees an implausible rate of change, and it may not return after clearing.
- After any steering column or suspension work, the steering angle sensor must be recalibrated even if the sensor was not touched, or C0527 and stability control faults will appear.
- On some vehicles, a failing ABS wheel speed sensor or tone ring can cause the ESC module to cross-check steering angle against wheel speeds and falsely flag the steering angle sensor as mechanically faulty.

## Can I keep driving with C0527?

The vehicle remains steerable and safe to drive at normal speeds, but the electronic stability control and traction control systems are disabled, which reduces safety in slippery conditions or emergency maneuvers. Avoid aggressive driving, towing, or driving on wet or icy roads until the fault is repaired and the system is restored.



## Tools that help

- OBD-II scan tool with ABS/ESC and steering angle sensor capability
- Digital multimeter for checking sensor power, ground, and signal circuits
- Vehicle-specific service information for calibration procedures
- Basic hand tools for trim and steering column access
- Torque wrench for steering column fastener tightening

## Reading C0527

- 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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- 27** The exact fault within that area.

## Often seen with

**C0521** Multi-axis Acceleration Sensor Module B Range/Performance · **C0522** Multi-axis Acceleration Sensor Module B Missing Calibration · **C0523** Multi-axis Acceleration Sensor Module B Intermittent/Erratic · **C0524** Multi-axis Acceleration Sensor Module B Correlation · **C0525** Multi-axis Acceleration Sensor Module B

## See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0527/>

