

GENERIC · CHASSIS

C0528

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0528

Steering Angle Sensor Module Range/Performance

C0528 indicates that the steering angle sensor (SAS) module has reported an out-of-range or erratic signal to the electronic stability control (ESC) system, meaning the computer cannot trust the steering wheel position data. The module detects that the sensor's output voltage or calculated angle falls outside the expected range for the current driving conditions, or that the signal is not performing as designed.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Traction control and stability control warning lights illuminated on the dashboard
- Electronic power steering (EPS) warning light on, possibly with reduced assist
- Vehicle stability control system disabled, often accompanied by a chime
- Steering wheel may feel off-center or require more effort in some cases
- Often no symptoms besides the warning light, with normal steering feel

Common causes, most likely first

- 1 Faulty steering angle sensor (internal wear or contamination)
- 2 Damaged or corroded wiring harness or connector at the sensor
- 3 Poor electrical connection at the sensor or ESC module
- 4 Steering column or intermediate shaft binding or misalignment
- 5 Failed clock spring (spiral cable) causing intermittent signal
- 6 Software calibration drift or corrupted learned values in the SAS module
- 7 Low battery voltage or charging system issues affecting sensor reference voltage



How to diagnose and fix it

- 1 Inspect the battery and charging system to ensure stable voltage, as low voltage can set false range codes
- 2 Visually inspect the steering angle sensor connector and wiring for corrosion, chafing, or loose pins
- 3 Use a scan tool to read live steering angle data while turning the wheel slowly to check for erratic or missing signals
- 4 Perform a steering angle sensor calibration or relearn procedure according to the manufacturer's instructions
- 5 Check the clock spring for continuity and damage if the sensor signal is intermittent
- 6 Replace the steering angle sensor if live data confirms a faulty signal
- 7 Clear the code and verify the repair by test-driving and confirming the warning lights stay off

Before you replace the steering angle sensor

- A simple battery disconnect or low voltage event can cause the SAS module to lose its calibration, setting C0528 without any physical fault.
- Many technicians replace the sensor only to find the real issue is a worn clock spring or a chafed wire in the steering column.
- After any steering column or suspension work, the steering angle sensor must be recalibrated, or the code will return immediately.
- C0528 can be set by a misaligned steering wheel or improper wheel alignment, so check alignment before condemning the sensor.
- Some vehicles require a specific drive cycle to complete the SAS self-calibration, and skipping it can leave the code stored.

Can I keep driving with C0528?

It is generally safe to drive with C0528 as long as the steering feels normal, but the stability control system may be disabled, reducing safety in slippery conditions. Avoid aggressive driving or towing until the fault is repaired, and have the system diagnosed promptly.

Tools that help

- OBD-II scan tool with live data and steering angle sensor calibration capability
- Digital multimeter for voltage and continuity checks
- Socket set and trim removal tools for accessing the sensor
- Manufacturer-specific service information for calibration procedures
- Battery load tester or charging system tester



Reading C0528

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

Often seen with

C0040 Left Rear Wheel Speed Sensor Circuit · **C0045** Left Rear Wheel Speed Sensor Circuit Malfunction · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **C0051** Front Left ABS Solenoid 1 Circuit Malfunction · **U0126** Lost Communication With Steering Angle Sensor Module

See it working

Watch the animated explainer [How Variable Valve Timing Works: Cam Phaser and VVT Solenoid](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0528/>

