

GENERIC · CHASSIS

C0550

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0550

Encoder Position Switch Circuit

C0550 indicates that the electronic control module has detected an implausible or missing signal from the encoder position switch circuit, which is used to determine the rotational position of a component such as a transfer case motor or steering angle sensor. The computer compares the switch inputs against expected values and sets this code when the pattern does not match the commanded or expected position.

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

Symptoms you may notice

- Illumination of the anti-lock brake system (ABS) or traction control warning light
- Inability to engage or disengage four-wheel drive modes, if the encoder is part of the transfer case system
- Erratic or disabled stability control and hill descent features
- Steering angle sensor-related warnings or poor return-to-center feel, if the encoder is in the steering system
- Often no symptoms besides the warning light, with the vehicle driving normally

Common causes, most likely first

- 1 Faulty encoder position switch or sensor internal failure
- 2 Damaged, corroded, or disconnected wiring or connector at the encoder switch
- 3 Failed encoder motor or actuator that the switch monitors
- 4 Contaminated or degraded electrical contacts inside the switch housing
- 5 Control module software glitch or internal fault in the circuit driver
- 6 Mechanical binding or misalignment of the component the encoder tracks, causing out-of-range switch signals



How to diagnose and fix it

- 1 Connect a scan tool and record all stored and pending codes, then clear codes and test-drive to see if C0550 returns
- 2 Visually inspect the encoder switch, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Measure reference voltage and ground at the encoder switch connector with a digital multimeter, comparing to manufacturer specifications
- 4 Check the resistance or signal output of the encoder switch through its full range of motion, looking for dead spots or erratic readings
- 5 Verify that the mechanical component the encoder monitors moves freely and is not binding or misaligned
- 6 If the switch and wiring test good, substitute a known-good encoder switch or perform a relearn/calibration procedure as required
- 7 As a last step, diagnose the control module for internal faults only after all external circuit and component tests pass

Encoder switch faults that mimic other failures

- A binding encoder motor or transfer case actuator often sets C0550 because the switch cannot reach the commanded position, so replacing the switch alone will not fix the root cause.
- Corroded connector pins at the encoder switch are a frequent culprit on vehicles that see road salt or off-road use, and the corrosion can be hidden inside the boot.
- Some vehicles require a steering angle or transfer case position relearn after any encoder switch replacement, and skipping that step will immediately reset the code.
- A weak or failing battery or charging system can cause intermittent encoder signals that set C0550 without any hard fault in the switch circuit.
- The code does not always mean the encoder switch itself has failed; the control module's internal pull-up resistor or signal driver can fail and produce the same symptom.

Can I keep driving with C0550?

The vehicle is generally safe to drive if only the warning light is on and the brakes and steering feel normal, but avoid using four-wheel drive or stability control features until the fault is repaired. If the vehicle exhibits erratic steering assist or ABS activation, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket and ratchet set
- Contact cleaner and dielectric grease



Reading C0550

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

Often seen with

C0035 Left Front Wheel Speed Sensor Circuit Range/Performance · **C0455** Steering Wheel Position Sensor Circuit · **C0551** Longitudinal Acceleration Sensor Circuit/Open · **C0552** Longitudinal Acceleration Sensor Range/Performance · **C0553** Longitudinal Acceleration Sensor Circuit Low

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/c0550/>

