

GENERIC · CHASSIS

C0291

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0291

Brake Pedal Apply Sensor Circuit Malfunction

C0291 means the electronic brake control module has detected an electrical fault in the brake pedal apply sensor circuit, which is the input that tells the system how hard and how far the brake pedal is being pressed. The module compares the sensor signal against expected voltage ranges and plausibility with the brake switch, and it sets this code when the signal is out of range, erratic, or missing.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Anti-lock brake (ABS) warning light and often the red brake warning light illuminated on the dashboard
- Traction control and stability control (ESC) disabled, with their warning lights also on
- Brake pedal feels normal in most cases, so the driver notices only the warning lights
- Cruise control may refuse to engage or may drop out unexpectedly
- Hill-start assist or automatic brake hold may stop working
- In some vehicles the transmission may not shift out of park or may shift harshly

Common causes, most likely first

- 1 Brake pedal apply sensor itself has failed internally or its wiper track is worn
- 2 Loose, corroded, or damaged connector at the brake pedal sensor or the brake control module
- 3 Chafed or broken wiring in the harness near the pedal assembly or under the dash
- 4 Poor ground connection shared by the pedal sensor and the brake control module
- 5 Brake pedal position not correctly calibrated after pedal or sensor replacement
- 6 Contamination such as spilled liquid or debris on the sensor contacts
- 7 Brake control module internal fault, though this is the least common cause



How to diagnose and fix it

- 1 Scan all modules for codes and record freeze-frame data to confirm C0291 is current and not history
- 2 Inspect the brake pedal apply sensor connector and harness for corrosion, looseness, or chafing
- 3 Check the sensor's reference voltage, ground, and signal voltage with a digital multimeter while slowly pressing the pedal
- 4 Compare the apply sensor signal against the brake light switch and any second pedal sensor to check plausibility
- 5 Perform the manufacturer's brake pedal position sensor calibration or relearn procedure after any adjustment or replacement
- 6 Replace the brake pedal apply sensor if the signal is erratic or out of specification, then clear codes and verify
- 7 If the fault persists, check continuity and resistance on the signal circuit back to the brake control module before condemning the module

What the brake apply sensor code hides

- A misadjusted or uncalibrated brake pedal apply sensor after a pedal or sensor replacement is one of the most common causes of C0291, and a simple relearn often clears it without any new parts.
- The brake pedal apply sensor is often confused with the brake light switch, but they are separate inputs; a working brake light does not prove the apply sensor circuit is healthy.
- Corrosion inside the connector at the pedal assembly is easy to miss because the outside looks clean, so always back-probe the terminals rather than trusting a visual check.
- A weak or shared ground can pull the sensor signal out of range only when other loads are on, so test the circuit with the headlights and blower running as well as off.
- C0291 can be set by a low or failing battery during cranking, so check battery voltage and charging system health before replacing any sensor.

Can I keep driving with C0291?

The vehicle remains safe to drive in most cases because the base brakes still work, but ABS, traction control, and stability control are disabled, so avoid hard braking, slippery surfaces, and towing until the fault is repaired. If the red brake warning light is also on or the pedal feels abnormal, stop driving and have it inspected immediately.

Tools that help

- OBD-II scan tool with ABS and body module capability
- Digital multimeter with back-probe pins
- Manufacturer service information for wiring diagrams and calibration procedures
- Basic hand tools for trim and pedal assembly access
- Brake pedal depressor or assistant to hold pedal positions during voltage tests



Reading C0291

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

Often seen with

C0040 Left Rear Wheel Speed Sensor Circuit · **C0051** Front Left ABS Solenoid 1 Circuit Malfunction · **C0290** Brake Pedal Stroke Sensor Circuit Malfunction · **P0571** Brake Switch 'A' Circuit

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0291/>

