

GENERIC · CHASSIS

**C0650**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

**C0650**

## Brake Pressure Sensor N Range/Performance

C0650 indicates that the antilock braking system (ABS) control module has detected a range or performance problem with the brake pressure sensor, typically the master cylinder pressure sensor. The computer compares the sensor's voltage signal against expected values for the current brake pedal position and hydraulic pressure, and it flags the code when the signal falls outside the allowable range or fails to change as expected during a self-test.

SYSTEM

**Chassis**

CODE TYPE

**Generic (all makes)**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Brakes, steering and suspension**

### Symptoms you may notice

- ABS warning light illuminated on the dashboard, often accompanied by the traction control and stability control lights
- A stored code C0650 with no other drivability symptoms in many cases
- Reduced or disabled ABS and traction control functions, which may only be noticed during hard braking or slippery conditions
- Brake pedal feel that seems normal, though some drivers report a slightly soft or inconsistent pedal
- In rare cases, a brief pulsation or noise from the ABS hydraulic unit during the module's self-test

### Common causes, most likely first

- 1 Faulty brake pressure sensor, typically the master cylinder pressure sensor, due to internal wear or contamination
- 2 Damaged or corroded wiring and connectors between the pressure sensor and the ABS control module
- 3 Low brake fluid level or air trapped in the hydraulic system, causing pressure readings outside the expected range
- 4 A failing ABS control module, especially if other sensor codes are also present
- 5 Restricted or leaking brake lines or a faulty master cylinder that prevents pressure from building correctly
- 6 A sensor that has been contaminated by debris or moisture in the brake fluid



## How to diagnose and fix it

- 1 Check the brake fluid level and inspect for leaks around the master cylinder and brake lines, topping up or repairing as needed
- 2 Inspect the pressure sensor connector and wiring for corrosion, chafing, or loose pins, and clean or repair the harness
- 3 Use a scan tool to view live brake pressure sensor data and compare it with actual pedal application to confirm a range or performance fault
- 4 Perform a resistance and voltage test on the sensor according to the manufacturer's specification, replacing the sensor if it is out of range
- 5 Bleed the brake system thoroughly to remove any trapped air that could skew pressure readings
- 6 If the sensor and wiring test good, check for technical service bulletins (TSBs) or software updates for the ABS module before condemning it
- 7 Replace the ABS control module only after all other causes have been ruled out, and perform any required programming or calibration

## What most technicians overlook on C0650

- A low brake fluid level or a small leak can set C0650 without ever triggering a red brake warning light, so always check the reservoir first.
- The brake pressure sensor is often integrated into the master cylinder or ABS hydraulic unit on many vehicles, making replacement more involved than a simple bolt-on sensor.
- After replacing the sensor or ABS module, a calibration or learn procedure is frequently required; skipping it will cause the code to return immediately.
- Corroded pins in the sensor connector are a common cause that mimics a failed sensor, so always perform a wiggle test and inspect the terminals before replacing parts.
- C0650 can be set by a failing ABS module that intermittently drops the sensor signal, so check for other ABS codes or communication faults before condemning the sensor.

## Can I keep driving with C0650?

The vehicle remains drivable with normal braking in most cases, but ABS and traction control may be disabled, which reduces safety in emergency stops or slippery conditions. Avoid hard braking and wet or icy roads until the fault is repaired, and address the code promptly to restore full braking assistance.

## Tools that help

- OBD-II scan tool with ABS live data capability
- Digital multimeter
- Brake fluid level and condition tester
- Socket and wrench set
- Brake bleeding kit



## Reading C0650

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

## Often seen with

**C0035** Left Front Wheel Speed Sensor Circuit Range/Performance · **C0040** Left Rear Wheel Speed Sensor Circuit · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **C0110** ABS Pump Motor Circuit Malfunction · **C0561** ABS Disabled Warning Indicator Request

## 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/c0650/>

