

GENERIC · CHASSIS

C0081

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0081

Wheel Speed Mismatch (Rear Axle)

C0081 indicates that the anti-lock brake system (ABS) control module has detected a mismatch in wheel speed signals between the two rear wheels on a rear axle. The module compares the speeds reported by the left and right rear wheel speed sensors and sets this code when the difference exceeds a calibrated threshold for a specified time, indicating a fault in one sensor, its wiring, or a mechanical issue affecting that wheel's speed reading.

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

Symptoms you may notice

- Illumination of the ABS warning light on the dashboard, often accompanied by the traction control and stability control lights.
- The ABS system may be disabled, leading to conventional braking without anti-lock assistance during hard stops.
- Traction control and stability control systems may be deactivated, reducing vehicle safety in slippery conditions.
- A pulsation or vibration felt through the brake pedal during braking if the mismatch causes erratic ABS activation.
- Often no symptoms besides the warning light, especially if the mismatch is minor or intermittent.
- In some cases, the transmission may shift erratically or the speedometer may read incorrectly if the rear wheel speed signal is used for those functions.

Common causes, most likely first

- 1 A faulty rear wheel speed sensor on one side, due to contamination, damage, or internal failure.
- 2 Damaged or corroded wiring or connector at the rear wheel speed sensor, often caused by road debris or moisture intrusion.
- 3 A missing or damaged tone ring (exciter ring) on one rear wheel, which provides the signal for the speed sensor.
- 4 Excessive air gap between the wheel speed sensor and the tone ring due to rust buildup or incorrect installation.
- 5 Mechanical issues such as a bent axle flange, worn wheel bearing, or brake drag that causes one rear wheel to rotate at a different speed.
- 6 A malfunctioning ABS control module that incorrectly processes the wheel speed signals, though this is less common.
- 7 Tire size mismatch or improper tire pressure on one rear wheel, leading to a consistent speed difference.



How to diagnose and fix it

- 1 Inspect both rear tires for size, wear, and pressure to rule out a simple mismatch that can cause a speed difference.
- 2 Visually inspect the rear wheel speed sensors, wiring, and connectors for damage, corrosion, or loose connections; clean and repair as needed.
- 3 Check the tone rings on both rear wheels for cracks, missing teeth, or debris; replace if damaged.
- 4 Use a scan tool to view live wheel speed data from all four wheels while driving to identify which rear sensor is reporting an erratic or missing signal.
- 5 Measure the air gap between the sensor and tone ring with a feeler gauge and compare to specification; adjust or replace components as necessary.
- 6 Perform a resistance and voltage test on the suspect sensor and its wiring according to the manufacturer's procedure; replace the sensor if out of specification.
- 7 If all sensors and wiring check out, diagnose the ABS control module for internal faults, including checking power and ground connections, and replace if confirmed faulty.

Common misdiagnosis traps for C0081

- A mismatched tire size or severely uneven tire wear on the rear axle can set C0081 without any sensor fault, so always verify tire condition and size before replacing parts.
- Rust buildup on the rear axle or tone ring can alter the air gap and cause a weak signal that only appears at certain speeds, leading to intermittent codes that are hard to reproduce.
- The ABS module may set C0081 when a rear wheel speed sensor signal is lost intermittently due to a wiring harness chafe near suspension components, which visual inspection alone may miss.
- A worn rear wheel bearing can cause excessive play that affects the tone ring alignment, generating a speed mismatch that mimics a sensor failure.
- On some vehicles, the rear wheel speed sensors are shared with the transmission output speed sensor, so a drivability issue may accompany the ABS light and mislead diagnosis.

Can I keep driving with C0081?

The vehicle remains drivable with C0081 because normal braking is unaffected, but the ABS and stability control systems may be disabled, reducing safety in emergency or slippery conditions. Avoid hard braking and slippery roads until the fault is repaired, and have the system diagnosed promptly to restore full brake assist features.



Tools that help

- OBD-II scan tool with ABS live data capability
- Digital multimeter
- Feeler gauge set
- Jack and jack stands or a lift
- Basic hand tools (sockets, wrenches, screwdrivers)
- Manufacturer-specific wiring diagram and service information

Reading C0081

C	Chassis: brakes, steering and suspension.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
0	Brakes, steering and suspension.
81	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 · **C0082** Brake System Malfunction Indicator · **C0110** ABS Pump Motor Circuit Malfunction

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/c0081/>

